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# QUARTERLY WEATHER REPORT

OF THE

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# METEOROLOGICAL OFFICE

## For 1878.

Published by the Authority of the Meteorological Council.

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1887.

# PREFACE.

No alteration has been made in the plan of the present volume of the Quarterly Weather Report from that adopted in the volume for 1877.

It is accompanied by similar tables and plates, and by the usual Appendix giving the mean results derived from the numerical values yielded by the self-registering instruments at the Seven Observatories.

In addition, it contains a special paper by Lieut.-General Richard Strachey, R.E., F.R.S., on the Computation of the Quantity of Heat in Excess or Defect of a Fixed Base, being an Explanation of the Method in which the Tables of Accumulated Heat, above and below 42° F. respectively, are calculated for the Weekly Weather Report.

ROBERT H. SCOTT,
Secretary.

Meteorological Office,
June 11, 1887.

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# QUARTERLY WEATHER REPORT.

## (NEW SERIES.)

## 1878.

### INTRODUCTORY REMARKS.

The area to which the following Weather Report applies is mainly that contained between the 40th and 65th parallels of North Latitude, and the Meridians of 15° East and West of Greenwich, the British Isles lying nearly centrally within it.

The information on which the Report is based has been derived chiefly from the Daily Weather Reports issued by the Meteorological Office, the curves of the self-recording observatories, and the observations made over the United Kingdom at Stations of the Second Order. These have been supplemented by reference to the "Bulletin International" of Paris, and the North German and Russian Weather Reports.

The Report is divided into three sections as follows:—

Section I.—A General Summary of the chief features of the weather for the quarter, showing the most marked variations which have occurred, arranged with reference to the principal changes which have taken place in the distribution of atmospheric pressure during the period.

Section II.—Tables of the principal Cyclonic and Anticyclonic Systems, showing the size, movements, and other peculiarities of each, accompanied by smaller Tables showing the velocities of wind which were recorded instrumentally during the more serious gales.

Section III.—Remarks on the distribution of Wind, Pressure, Temperature, Vapour, and Rainfall for each month; accompanied by Tables showing the mean values for the different meteorological elements for the observatories, the Stations of the Second Order, and the Telegraphic Reporting Stations, and by two monthly plates. One of these plates shows graphically the relative prevalence of wind from each of eight points, and the other (1) the distribution of mean Pressure, (2) the movements of the depressions referred to in Section 2, (3) the distribution of mean Temperature, and (4) the amount of Rainfall measured at each station.

The Report is further illustrated by two sets of plates; (1) Chart Plates, showing by small maps the distribution of wind and pressure over the British Islands and their neighbourhood at 8 a.m. and 6 p.m. daily; and (2) the usual Plates giving on a reduced scale the curves of the self-recording instruments at the seven Observatories, in the same way as in the previous volumes of this Report.

*Section* I needs no explanation.

*Section* II.—Some of the terms employed may usefully be explained:—

The area enclosed by the outermost of a system of isobars of which the value *decreases* from without inwards is termed an "area of low pressure," or "cyclonic area," or

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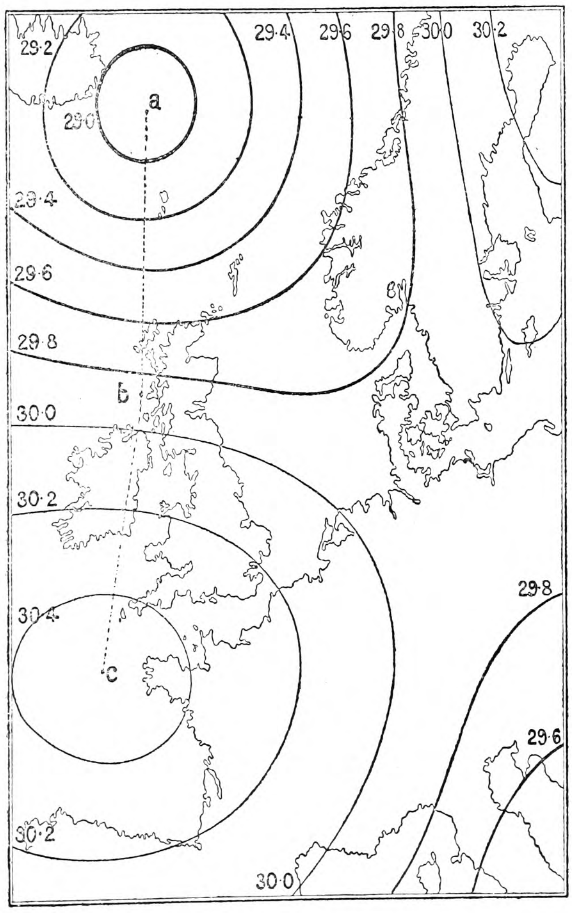
"depression." Similarly, the area enclosed by the outermost of a system of isobars in which the pressure *increases* from without inwards, is termed an "area of high pressure," or "anticyclonic area," or "anticyclone."

In the accompanying figure (which is purely hypothetical) an area of low pressure is shown near Iceland, and an area of high pressure near the mouth of the English Channel, while the existence is indicated of another area of high pressure over the extreme north of Europe, and of a second area of low pressure over the Adriatic and the western part of European Turkey.

The area of somewhat high pressure which unites the high pressure system over the Bay of Biscay with that over northern Europe, is termed a "ridge" or "col," while the arm of relatively low pressure which extends south-eastwards from the cyclonic system towards the col is termed a "hollow."

The centre of a cyclonic or anticyclonic system is the point at which the pressure is least or greatest, respectively. The centres of the systems shown in the diagram are marked "a" and "c." The position of the centre is not in general known from direct observation, but may be inferred with a sufficient approach to the truth from the form of the interior isobars.



The "depth" of a cyclonic system, and the "height" of an anticyclonic system, is the difference between the height of the barometer at the centre, and at the bounding isobar, which for the systems marked "a" and "c" in the diagram would pass through the point "b." The "motion" of the system is that of its centre.

The "size" of either system is the extent of the area enclosed by its outermost isobar.

The "form" of the system is the generalized form of its isobars, but as the isobars are only roughly similar to one another this definition does not admit of much precision.

The "gradient" between two places is measured by the proportion which the difference between the simultaneous heights of the barometer at those places bears to the distance between them. The barometric differences are expressed in decimals of an inch, and the unit of distance is 15 nautical miles. The gradient is thus virtually expressed in terms directly comparable with the French measure, in which the units are millimetres for barometric height, and a degree of the meridian (or 60 nautical miles) for distance. The gradients are always to be measured at right angles to the isobars.

In describing the size, depth, or rate of motion of Cyclonic systems, the following scales of nomenclature have been employed:—

| | | |
|---|---|---|
| SIZE - - | Very small - | When the radius of the outer isobar is less than 50 miles. |
| | Small - - | „ „ „ is more than 50, less than 150 miles. |
| | Moderate - | „ „ „ „ 150 „ 300 „ |
| | Large - - | „ „ „ „ 300 „ 500 „ |
| | Very large - | „ „ „ „ 500 miles. |
| DEPTH - | Very shallow - | When the difference of pressure between the margin and centre does not exceed 0·2 in. |
| | Shallow - | „ „ „ „ „ varies from 0·2 to 0·5 „ |
| | Moderate - | „ „ „ „ „ „ 0·5 „ 0·9 „ |
| | Deep - - | „ „ „ „ „ „ 0·9 „ 1·4 „ |
| | Very deep - | „ „ „ „ „ exceeds 1·4 ins. |
| RATE OF MOTION - | Very slow - | When the average rate during the period referred to is less than 10 miles per hour. |
| | Slow - - | „ „ ranges from 10 to 20 miles per hour. |
| | Moderate - | „ „ „ 20 „ 35 „ |
| | Rapid - - | „ „ „ 35 „ 50 „ |
| | Very rapid - | „ „ exceeds 50 miles per hour. |

For Anticyclonic systems, the scale of nomenclature for rate of motion has been retained, but for size and height the following rules have been observed:—

For size, anticyclones have been divided into only two classes: (1) Large—or those which cover extensive tracks of the earth's surface, which (as a rule) travel very slowly, and of which only a small portion is usually observable over our area; (2) Small—or those which either (*a*) are subsidiary to larger anticyclones, or (*b*) appear as a temporary phenomenon, between two cyclonic disturbances, often travelling at a considerable rate.

For the Height of Anticyclonic systems the following scale is employed:—

| | |
|---|---|
| VERY SMALL | when the difference between the pressure at the outer isobar and that at the centre is 0·2 in., or less. |
| SMALL | „ „ „ „ is more than 0·2 in. but does not exceed 0·4 in. |
| MODERATE | „ „ „ „ „ 0·4 „ „ 0·7 „ |
| GREAT | „ „ „ „ „ 0·7 „ „ 1·0 „ |
| VERY GREAT | „ „ „ „ exceeds 1·0 „ |

The approximate values for the highest pressures about the centre of each anticyclone are quoted in figures whenever they are known.

The "form" of an anticyclonic system cannot always be ascertained, as it frequently happens that the greater part of it lies over localities for which the observations are either altogether wanting, or are very few in number.

In *Section* III. the tables contain the mean values of the chief meteorological elements for each month: (A) for the Self-recording Observatories, (B) for Stations of the Second Order, and (C) for the Telegraphic Reporting Stations.

Those for the Observatories are arranged in the same order as that in which they appear on the plates, and the data given are mainly identical with those printed in Table I. Appendix I. p. [1], where the monthly values for each observatory are summarised for the whole year. In the latter table, however, the barometrical readings are not reduced to sea level. The Stations of the Second Order and Telegraphic Reporting Stations have been arranged in eleven groups, corresponding with the eleven meteorological districts into which the United Kingdom has been divided for Agricultural and Sanitary purposes, and are printed in order of latitude, beginning with the station which lies furthest north.

The data in Table B. for the Stations of the Second Order have also appeared in the "Meteorological Observations from Stations of the Second Order for 1878," where they are arranged in the form of Monthly Summaries.

The Plates are as follows:

(I.) A Wind Chart showing by "area wind-roses" the prevalence of the wind from each of eight points; the frequency of winds blowing from between any specified points being indicated by the *area* of the portion of the wind-rose comprised between the corresponding limits. In the roses here employed the total area of those portions of the rose which indicate the winds and calms respectively (viz., the "petals," and the small shaded central circle), is equal to one-half the area of the circle round, or within, which they are drawn.

(II.) A Monthly Weather Chart, exhibiting:—

(1.) The Distribution of Mean Pressure, shown by isobars, drawn for each half-tenth of an inch, the mean barometric readings employed being those for 8 a.m. recorded at our Telegraphic Reporting Stations; but the mean pressure for the month at each Observatory, derived from 24 hourly readings each day, is inserted on the map close to the geographical position of the Observatory.

(2.) The movements of the depressions are shown in the following manner. The position of the centre of each of the chief depressions is determined as nearly as possible for 8 a.m. and 6 p.m. on each day during which the depression was within the area of our information; and these points are united by straight lines. The lines have arrow-heads drawn on them, showing the directions of the movements.

(3.) The distribution of mean temperature, shown by isotherms, drawn for each degree Fahrenheit; the mean temperatures employed being the numerical means of the maxima and minima for each day recorded at the Stations of the Second Order and the Telegraphic Reporting Stations. A correction at the rate of 1° F. for each 300 feet of vertical height has been added to the mean values in order to reduce them to the sea level. The mean temperature for each of the observatories, derived from 24 hourly readings each day, is also inserted.

(4.) The Rainfall chart shows in figures the Total Amount of Rain recorded during the month at each station. The values are inserted close to a dot, indicating the geographical position of the station to which it refers.

When both an Observatory and a Telegraphic Reporting Station are situated at the same place, the value for the Observatory has been used in preference to that for the Telegraphic Reporting Station, but both values are given in the tables.

In preparing the Chart Plates the isobars have been drawn, as a rule, for each alternate tenth of an inch; but when the difference between the extreme readings reported and the extreme isobar at any given time exceeds a tenth of an inch, the value of such readings is stated in figures, which are placed in their proper position on the map.

A broken isobar indicates uncertainty as to its course, owing to deficiency of information.

The prevalent winds are shown by arrows, which are drawn flying with the wind. The force is indicated by the number of barbs and feathers thus: ≫—→ = a strong gale (forces 8 to 12); —→ = a strong wind (forces 5 to 7); —⇀ = a light to moderate wind (forces 1 to 4); and ⊙ = a dead calm.

# PART I.

## SECTION I.

## GENERAL SUMMARY FOR THE QUARTER.

THE weather of the quarter was not characterized by any very remarkable atmospherical phenomena. Anticyclonic systems prevailed over or contiguous to the British Isles during a great part of the period, and consequently, except in a few instances, the centres of the depressions which were felt did not pass immediately over any part of the kingdom. Pressure was generally above the average, and was never exceptionally low, while temperature was nearly normal, and the weather upon the whole dry.

January 1st–8th.—On the morning of the 1st two distinct areas of high pressure were observed over Europe, one near to the south-western coast of France, and the other over eastern Europe. They were separated from each other by a band of relatively low readings, which stretched in a south-easterly direction, from a large area of low pressure lying over the ocean to the north-westward of our Islands, across the North Sea and Germany to Italy. Light or moderate Southerly winds, with fine but rather dull weather, prevailed over the British Isles.

During the first few days of the month a series of depressions passed in a north-easterly direction across the northern portion of our area, bringing Southerly and South-westerly winds, with mild weather, to the British Isles, but without causing any very important movements of the barometer. At the same time, however, pressure became rather more uniformly distributed over the Continent, over the central and southern portions of which a large area of relatively high readings became established. On the 6th a serious fall of the barometer set in, in front of a depression which was then approaching us from the north-west. Its centre had reached the Moray Firth by the morning of the 7th, and, continuing to travel in a south-easterly direction, it passed from thence across the Netherlands and Germany to the Adriatic, where it disappeared on the 9th. Its passage was accompanied by fresh squally winds, which veered to the Northward in its rear, and by a slight, but very general, decrease in temperature.

Following upon the passage of this disturbance a new distribution of pressure began to develope itself. The lowest readings became transferred to the Continent, and an area of high pressure showed itself off our north-western coasts; and at the close of the 8th the barometer was rising all over the kingdom, with fresh Northerly winds and fine weather.

January 9th–22nd.—Throughout nearly the whole of this period the weather of the British Isles was under the influence of the new anticyclonic system just referred to. Its centre had reached the midland counties of England on the 11th, when light variable winds, with a generally low temperature, prevailed over the greater portion of our Islands, and Easterly winds over France. By the following day the centre had shifted to the mouth of the Channel, the barometer having begun to fall in the north under the influence of a depression which was approaching the Norwegian coast from the westward. With this movement Westerly winds and warmer, but dull and cloudy, weather became general over the United Kingdom; while over France and Germany the Easterly wind continued, and the cold became very severe. Still moving slowly to the southward the anticyclone lay over the Bay of Biscay on the 13th, when a reading of 30·85 inches was reported from Biarritz, and, the centre of the depression already referred to having now reached the Norwegian coast, gradients for Westerly winds became steep over the British Isles. Another depression following a similar track, passed to the northward of Scotland early on the 16th, after which the barometer rose again at our northern stations and the anticyclone returned to our south-western coasts, gradients again becoming slight. The centre of the high pressure area now moved eastwards across southern England to the Continent, and simultaneously gradients for Southerly winds appeared in the west, and soon became general. On the 19th the barometer began to fall at all our stations, but especially in the north, and during the night of the 20th a deep depression passed eastwards to the coast of Norway, a Westerly gale with very heavy squalls being experienced very generally over the United Kingdom. This was followed by a subsidiary disturbance which passed across Scotland during the 21st and travelled away to the Baltic, the anticyclone moving at the same time southwards again to the Peninsula, where it lay on the morning of the 22nd when the centre of the main depression was disappearing over Lapland. At the close of that day the barometer was again falling very rapidly in the north, and fresh Westerly winds were blowing at some of the Channel and western stations.

January 23rd–26th.—Throughout these four days pressure was highest over the Peninsula, while to the northward of our Islands there was a large area of low readings through which travelled two or three deep depressions whose passage caused the barometer to continue very unsteady. The first of these disturbances, which was very deep, reached the neighbourhood of the Shetlands on the morning of the 23rd, and a Westerly gale with strong squalls was experienced in all parts of the kingdom, and a good deal of snow fell in Scotland. One or two secondary disturbances followed, after which the wind veered to North-west and moderated. At the close of the 25th the barometer was rising briskly at all our stations, with a fresh Northerly wind and frequent snow showers, and in the course of a few hours gradients became much less steep and the winds over the British Isles light and variable. On the morning of the 26th one area of low pressure was lying over the southern Baltic, and another over the Adriatic, while a second high pressure area was beginning to show itself in the north of Sweden. In the afternoon the barometer began to fall again in Ireland, but in other parts of the kingdom it continued to rise throughout the day.

January 27th–29th.—A considerable modification of the distribution of pressure noticed on the 26th had taken place by the 27th. The new high pressure area over northern Sweden had developed itself considerably, and was connected by a band of tolerably high readings with the older anticyclone over the Peninsula, then apparently becoming dispersed. A rather large area of low pressure lay over south-eastern Europe, and the barometer was falling over the British Isles, under the influence of a new cyclonic centre, which was approaching our northern coasts from the westward, and which in the course of the day caused the Southerly wind to increase to a gale at some of the northern stations. At 8 a.m. on the 28th the centre of this disturbance was not far from the north of Scotland, and the barometer was rising again except in the south-east of England, where, owing to a small subsidiary depression lying over the central counties, the recovery did not begin till a few hours later; winds were Westerly or North-westerly on the western coasts, but Southerly over south-eastern England. The subsidiary depression had reached the North Sea by the evening, and the wind had then become North-westerly over the south-western portion of our Islands, and Westerly elsewhere, with a steadily rising barometer. By the following morning the northern anticyclone had moved somewhat to the north-eastward, and the southern high-pressure system was returning once more towards our Channel coasts, the two systems being divided by a belt of lower pressure, which stretched in a south-easterly direction from the Shetlands across the North Sea and Germany, and with these conditions light North-westerly or Westerly winds and fine weather prevailed over the British Isles.

January 30th–February 11th.—Anticyclonic conditions had now become established again over the British Isles. The highest readings were reported from the northern counties of England, but over the whole kingdom pressure was very uniform, with light winds and dry weather. Over central and south-eastern England temperature was rather low, but in the west and north it was comparatively high. These conditions continued without any material change for several days, the centre of the anticyclone remaining over or near the south of England, while the centres of some depressions passed in an easterly direction over the extreme northern portion of our area. On the 9th, however, the barometer fell briskly under the influence of a depression passing to the westward of our Islands, and in the south of Ireland the Southerly wind rose to a strong breeze. Simultaneously the anticyclone shifted to the south of France and decreased in height, so that gradients did not become steep, and on the 11th readings, although not very high, were still uniform over the whole of western Europe.

February 12th–20th.—Somewhat unsettled weather now prevailed for a time, the barometer becoming unsteady, although the wind did not increase in force to any considerable degree. For a short time on the 12th the barometer rose pretty generally, but this was soon followed by a fresh fall, and at the close of the day a shallow depression had reached our south-western coasts, the wind rising during the night to a moderate gale at a few places in the west; after remaining nearly stationary over St. George's Channel till the 14th, this depression, which was very shallow throughout, became dispersed. On the 15th a new depression was observed off our western coasts, and the barometer being highest over south-eastern Europe, the winds over the British Isles were Southerly, but generally moderate. During the day the depression travelled slowly northward, and at the same time the barometer rose over nearly the whole of southern Europe, so that by the 16th, although pressure was highest over northern Italy it was also high and uniform over the whole of France and Germany. During the next two days the centre of high pressure moved westward to the Bay of Biscay, the winds over our Islands veering to West with fine, and in central and south-eastern England very warm, weather. A very general increase of pressure over the British Isles accompanied this movement, notwithstanding that a deep depression was then approaching the Scandinavian coast from the westward; but early on the 19th a fresh fall of the barometer began in the west, and the wind again backed to South and freshened considerably, upon the approach of a new depression which skirted our western and northern coasts, and reached the Norwegian coast at the close of the 20th. Its passage was followed by a rapid increase of pressure over Scotland and Ireland, and by a less rapid rise over the rest of the Kingdom, the wind veering to West and moderating, with generally fine weather.

February 21st–26th.—Throughout this interval an area of high pressure lay to the south or south-west of our Islands, and light or moderate Westerly winds were experienced all over the country. The centre of the system was near the mouth of the Channel on the 21st, where the barometer was as high as 30·7 inches. On the 22nd the centre of a deep depression was observed over Lapland, and steep gradients for Westerly winds prevailed over the whole of Scandinavia. In the course of the day, however, a steady decrease of pressure set in over our Islands, and continued with little interruption till the 27th. A disturbance passed to the northward of Scotland on the 25th, but a more important one was approaching us from the Atlantic, in front of which the winds backed to South and increased in force, with rain at a good many western stations.

February 27th–March 2nd.—The highest pressure now receded again to the south of France, while the depression just referred to passed in a north-easterly direction along our western littoral, the wind rising in places to a gale, with generally dull and rainy, but warm weather. On the 28th a small subsidiary depression or squall passed across the country from west to east, accompanied by a sharp fall of rain, and followed by a shift of wind to North-west and a very rapid but temporary recovery of pressure (see Armagh and Glasgow curves, Plate XII.). The approach of a new depression caused a fresh general decrease of pressure on the 1st, the wind rising to a gale at many of the south-western stations, with a good deal of rain generally and high temperature for the time of the year. The disturbance passed away towards northern Europe and was succeeded by a brisk and general rise of the barometer, the system of high readings in the south moving northwards again towards our southern coasts, and bringing light to moderate Westerly winds and fine weather.

March 3rd–23rd.—For the first few days of this period the centre of the anticyclone was over northern France and the Channel, but the arrival of a series of depressions over northern Europe caused pressure to give way again very rapidly in Scotland, and the anticyclone moved once more to the south-west. One of the most important of this series of disturbances arrived on the 6th, and caused the wind to rise to a sharp gale from West at many of our northern and western stations. It passed away to the Baltic, but was followed next day by another which produced a fresh general increase of wind-force, a severe gale being experienced in Scotland and over many parts of England. On the morning of the 8th the centre of the first of these disturbances was over the Gulf of Finland, and the second had reached the southern Baltic, and although the wind had moderated on our coasts, it was blowing a strong gale in the Netherlands and over North Germany. The advent of the second depression was accompanied in Scotland by a rapid rise of temperature, which was followed by nearly as abrupt a fall when the disturbance had passed. Northerly and North-westerly winds had become general over western Europe at the close of the 8th, and although they were generally moderate with us, they were still strong on the Norwegian coast, while from Toulon a very strong gale was reported. A new depression passed to the northward of Scotland during the night of the 9th, and yet another on the 11th, but neither of them caused any important increase of wind, although the barometer fell generally with the first, and again in Scotland, but to a less extent, with the second also.

At the close of the 11th, a large area of low readings was reported from Scandinavia, while in the south-west the anticyclone was observed once more over the Bay of Biscay. By the following morning the centre of the depression had reached the Southern Baltic, strong North-westerly or Northerly winds being reported from Norway, Denmark, and the Netherlands, and from thence it travelled away across Russia, the anticyclone extending itself at the same time to the northward, and becoming established over our Islands. After rising to as high as 30·7 inches in Ireland on the 16th and 17th, the barometer began to fall again, and the centre of the anticyclone moved to the south-west. Slight depressions now began again to be observed, crossing over Scandinavia, and producing moderate gradients for Westerly and North-westerly winds in our Islands. On the morning of the 22nd the centre of one of the deepest of these lay over the Baltic, and strong winds were experienced over Scandinavia and Denmark, and moderate Northerly winds and cold weather over the British Isles. For several days the barometer had fallen steadily over Great Britain, and at the close of the 23rd the anticyclone had become dispersed, and pressure was low over the whole of Northern Europe.

March 24–31.—During the remainder of the month the barometer continued low and very unsteady, and several depressions were experienced which seriously influenced the weather over the British Isles. On the morning of the 24th the barometer was rising over Scandinavia but falling over Great Britain, and although the general direction of the isobars remained unchanged a subsidiary disturbance was showing itself near the mouth of the Channel. A very sudden and heavy squall passed rapidly across England in the course of the afternoon accompanied by a heavy fall of snow and by a sudden increase of temperature (see Plate XVII.), the wind rising for a short time to the strength of a fresh gale. At 6 p.m., two distinct barometrical minima were shown in the large area of low pressure which covered the North Sea and southern Scandinavia, one upon our east coast and the other over southern Norway, while upon our north-western coasts a fresh gale was blowing. The barometer rose on the 25th and gradients became less steep, but on the following day it fell again, especially at the northern stations, as a fresh shallow depression passed across Scotland. The centre of this disturbance was near Denmark on the 27th, but its further progress to the eastward was then checked by an area of higher pressure which had appeared over Russia, and after remaining nearly stationary for a few days it eventually became filled up. In its rear Northerly winds had become general over the British Isles, but the barometer had begun to fall briskly again in the south-west in front of a new depression, and the decrease continued steadily throughout the 28th, by the evening of which day the wind had became generally Easterly. The centre of the new depression reached the mouth of the Channel and Normandy during the ensuing night, and an exceptionally strong Easterly gale was experienced on the Channel coasts with a good deal of snow, which was particularly heavy in Devon and Cornwall. The centre of the depression was still over the Channel and north-west France on the morning of the 29th, and had become deeper, the Easterly gale still blowing in the Channel and over central England, although in Scotland the wind was moderate and Northerly. As the depression travelled to the eastward the wind backed and moderated and in the south-west the barometer rose quickly. On the 30th the centre of the depression reached the Netherlands and northern Germany, having changed its course somewhat to the northward, but no important change took place in pressure, and the weather remained very unsettled; next day, however, a quick and general fall of the barometer began and the wind backed to the Westward. Pressure was then everywhere low, though more so over the North Sea, Scandinavia, and the Baltic than elsewhere, but a new depression was approaching our northern coasts from the Atlantic, and the month closed with the weather in a very unsettled state.

## SECTION II.

### TABLE OF CYCLONIC SYSTEMS.—JANUARY, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. I. January 4-5. | No. II. January 6-9. | No. III. January 13-15. |
|---|---|---|---|
| **Form** | Unknown | Circular at first, then oval | Somewhat elliptical |
| **Size** | Uncertain, but probably large | Very large | Large |
| **Depth** | Moderate | Deep | Deep |
| **Where first Observed** | Gulf of Bothnia | To the north of Scotland | Off the coast of Norway |
| **Direction of Motion** | North-eastward | South-easterly | Easterly |
| **Rate of Motion** | Slow | Moderate | Slow |
| **Regions passed over by Steepest Gradients.** | Sweden | The British Islands | British Isles, North Sea, and Scandinavia. |
| **Termination** | Disappeared to the northward | Disappeared over the Adriatic Sea | Disappeared over Russia |
| **Time under Observation** | One day | Three days | Two days |
| **Accompanying Winds** | North-westerly over Norway and Sweden, South-westerly in the Baltic. | Westerly and North-westerly over the United Kingdom, veering to North and North-east as the centre passed across to Germany. | Strong Westerly over British Isles, South-westerly in Denmark and Southerly in Baltic; veering to North-west in Denmark and North in Sweden. |
| **„ Weather** | Dull with fog or mist at several stations. | Rough and squally, with hail, rain, or snow in many places. Lightning was seen at Pembroke. | Overcast and cloudy, except in extreme north of Scotland, where moderately fine weather was experienced. |
| **„ Rainfall** | Small amounts were reported from most stations. | General. A considerable fall of snow occurred in north of Scotland, and hail and sleet showers were common. | Only slight amounts fell all over our area, except at Haparanda, where 0·79 was reported on 7th. |
| **REMARKS** | An area of low pressure had existed to the northward of the British Isles for some days, and other depressions had passed through this region towards the north of Europe during that time. They were, however, too far to the northward to be well observed; and it was only the southern portion of this system which came within the area covered by our reports. | With the passage of this depression an entire change took place in the distribution of barometrical pressure, and the highest readings, which before the arrival of the depression lay to the southward of the British Isles, became transferred to our north-western coasts. | This system was immediately followed by another, but shallow, one, which passed to the northward of Scotland early on the 16th and reached the Baltic the following night. |

## TABLE OF CYCLONIC SYSTEMS.—JANUARY-FEBRUARY, 1878.

| No. IV.<br>January 21-22. | No. V.<br>January 23-25. | No. VI.<br>January 27-28. | No. VII.<br>February 12-14. |
|---|---|---|---|
| Oval | Circular | Irregular but somewhat oval | Elliptical. |
| Large | Very large | Large | Moderate. |
| Very deep | Deep | Shallow | Shallow. |
| Off the coast of Norway | Near the Shetland Isles | West of the Hebrides | South-west of Ireland. |
| North-easterly | Easterly at first, then south-easterly | North-easterly | North-easterly at first, then stationary for some time, afterwards extending itself in a south-easterly direction. |
| Slow | Very slow | Very slow | Very slow. |
| Norway and Sweden | United Kingdom and the North Sea | Scotland and the North Sea | Ireland, south-western England, and Wales. |
| Went away over Lapland | Disappeared over Russia | Disappeared to the north of Scotland | Dispersed. |
| One day | Two and a half days | Two days | Two days. |
| Generally Westerly in the British Isles. In Norway and Sweden it was South-westerly veering to North-west and North. | Strong Westerly and South-westerly over British Isles, Southerly and South-easterly in Scandinavia, becoming Northerly over these Islands and Easterly in Norway and Sweden. | Southerly in our Islands, strong in the north of Scotland, becoming Westerly as the depression moved away. | South-westerly in the south, South-easterly in the east, and North-westerly in the west of Ireland. |
| Very unsettled and stormy | Unsettled and squally with showers of snow, sleet, and hail. | Overcast, with mist and fog at many stations. | Wet and dull or overcast. |
| Heavy rain occurred in the north and north-west, an inch being reported at Greencastle. Snow fell at Wick. | Very general, but not heavy except in the north-west. Snow and hail occurred at many places. | Moderate amounts fell all over United Kingdom and France, at Ardrossan, however, 0·39 was reported on morning of 28th. Snow occurred at some places. | Very general and at some places heavy, about 0·9 in. being reported from Kingstown, Pembroke, and Jersey. |
| The centre of this very deep disturbance was preceded by a small subsidiary and followed by a deeper one, the latter passing across northern Scotland during the latter part of the 21st. The centre of the principal depression kept well to the northward of Great Britain. | This depression was followed by some subsidiary centres which apparently became merged in the principal one before it had passed out of our area. The movement of the latter was retarded by the existence of a band of relatively high pressure in its front. | The centre of this system skirted our north-western coasts, but it was accompanied by a subsidiary disturbance which passed across England to the Netherlands. | During the earlier days of the month some depressions had passed over the extreme north of Europe, but too far to the north to enable them to be described. The progress of this system was barred by the higher pressure in its front, but it was succeeded immediately by a fresh system which kept more to the westward and skirted our coasts in its progress to the northward. |

## TABLE OF CYCLONIC SYSTEMS.—FEBRUARY, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. VIII.<br>February 17-18. | No. IX.<br>February 19-21. | No. X.<br>February 24-26. |
|---|---|---|---|
| **Form** | Unknown | Uncertain, but probably oval | Oval |
| **Size** | Large | Large | Large |
| **Depth** | Deep | Moderate | Moderate |
| **Where first observed** | To the north-west of the British Isles | West of the Hebrides | Off the coast of Norway |
| **Direction of Motion** | North-easterly | North-easterly | South-easterly |
| **Rate of Motion** | Slow | Moderate | Slow |
| **Regions passed over by steepest Gradients.** | Scotland and Scandinavia | Scotland and the North Sea | Southern part of Scandinavia |
| **Termination** | Disappeared to the northward | Passed away to the northward | Moved away to Russia |
| **Time under Observation** | Two days | One and a half days | One day and a half |
| **Accompanying Winds** | South-westerly, veering to Westerly; moderate to strong. | South to South-west in England and Scotland, and West in Ireland, becoming generally Westerly as the depression moved away. | Generally from the West, but South-westerly in the Baltic, veering to North in Scotland, and North-east in Scandinavia. |
| **„ Weather** | Dull and unsettled, especially in the north. | Very cloudy and unsettled, clearing up in the rear of the depression. | Cold, with the sky overcast or cloudy |
| **„ Rainfall** | Slight rain was rather general | Moderate in the west of Ireland, slight elsewhere. | Rain fell at most places in the path of the depression, and snow occurred in Scotland and in the Baltic. |
| **REMARKS** | This depression was one of a series which skirted our western littoral about this time. The deep centre of a depression was observed over the north of Sweden on the 19th, but it was probably unconnected with this disturbance. | The centre of this depression kept to the westward of our Islands, and our knowledge of its size, &c., is therefore very indefinite. Another depression was noticed over northern Scandinavia on the 22nd and 23rd. | This depression did not greatly affect the wind over the British Isles, as its track was to the northward of us across Scandinavia. |

## TABLE OF CYCLONIC SYSTEMS.—FEBRUARY—MARCH, 1878.

| No. XI.<br>**February 27-28.** | No. XII.<br>**March 6-7.** | No. XIII.<br>**March 7-8.** | No. XIV.<br>**March 11-12.** |
|---|---|---|---|
| Unknown | Uncertain, but probably oval | Circular at first, becoming an irregular ellipse. | Oval. |
| Very large | Very large | Very large | Very large. |
| Moderate | Deep | Deep | Moderate. |
| North-west of the United Kingdom | To the northward of the Shetland Islands. | North of Scotland | North of the Shetlands. |
| North-easterly | Easterly | Easterly at first, then south-easterly | East-south-easterly. |
| Very slow | Moderate | Moderate | Slow. |
| Ireland and England | British Isles, North Sea, and southern part of Scandinavia. | Scotland, North Sea, and Denmark | North Sea and Denmark. |
| Passed off to northern Europe | Travelled off to Russia | Passed away to central Europe | Went away across the Baltic. |
| One day and a half | One day | One day | One day and a half. |
| Generally South or South-west; moderate to strong, with gales at some places. | West to North-west; strong generally, with gales at some western and northern stations, and in Scandinavia. | North-westerly, strong winds and gales. | North-westerly in Scotland, Westerly in England and Denmark; strong to a gale, but calms were reported from Gulf of Bothnia. Wind veered to North and North-west as centre moved across Denmark. |
| Overcast and gloomy, with much mist and fog. | Overcast and squally, becoming fair as the disturbance moved away. | Fair in south-east, squally and unsettled elsewhere. | Cloudy or overcast. |
| Very general; the largest amounts were registered in the west and north-west. | General, except in the south-east. Heavy in north of Scotland. Snow and sleet in Norway. | Snow showers in Scotland and Scandinavia and slight rain elsewhere, but none in the south and east of England. | Rain fell in the west and north-west, snow and hail in Scandinavia and Denmark. |
| This was the first of a series of disturbances which were felt, mainly in the northern part of the kingdom, at about this time. Their centres were, however, in every case at some distance to the westward of us, and no definite information can be given as to their shape and size. | The centre of this depression passed over quite the northern extremity of the area covered by our reports, but a subsidiary centre (marked XIIA. on the chart) passed to the southward of the principal one, and crossed over Scandinavia in an easterly direction. | This disturbance was preceded on the 6th by another which followed a more easterly course, and had reached the Gulf of Finland on the morning of the 8th, when the centre of this one lay over the southern Baltic. | This depression was preceded by one which passed to the northward of Scotland during the night of the 9th. |

## TABLE OF CYCLONIC SYSTEMS.—MARCH, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XV.<br>**March 26-28.** | No. XVI.<br>**March 28-31.** |
|---|---|---|
| **Form** | Circular, becoming oval | Oval. |
| **Size** | Large | Large. |
| **Depth** | Shallow | Shallow. |
| **Where first Observed** | Southern Scandinavia | Bay of Biscay and the mouth of English Channel. |
| **Direction of Motion** | Almost stationary, but extended itself in a south-easterly direction. | Easterly till 30th, then north-easterly. |
| **Rate of Motion** | Very slow | Very slow. |
| **Regions passed over by Steepest Gradients** | Denmark and southern Scandinavia | Southern part of England. |
| **Termination** | Filled up | Disappeared over Scandinavia. |
| **Time under Observation** | Two days | Three days. |
| **Accompanying Winds** | West to North-west in England and in Denmark, South to South-east in Baltic, and North in Norway. | East to North-east in British Isles, North-west to West in Bay of Biscay, and South in eastern France, changing to North in our Islands and France, South in Germany, and South-east in the Baltic. |
| „ **Weather** | Rather unsettled and variable | Very cloudy or overcast and unsettled. |
| „ **Rainfall** | Snow or rain occurred at most places, but it was nowhere heavy. | Rain, hail, and snow fell over the greater part of the kingdom, the largest amounts being recorded in south of England and France. |
| **REMARKS** | For several days a large area of low pressure had existed over Scandinavia, in which several small disturbances, which passed over or near our Islands, became merged. One of these was the severe squall or secondary depression which passed over southern England on the 24th. The further eastward progress of this large low-pressure area was prevented by the high pressure which existed to the eastward over Russia. | This depression occasioned an exceptionally heavy gale over the Channel coasts and the south of England. After reaching the Netherlands the centre moved in a more northerly direction towards the region lately occupied by the low-pressure system referred to in the remarks on No. XV. |

# TABLES OF GALES.

## No. 1. (Cyclonic System, No. 2.)

| Stations. | Velocity 30-40 Miles per Hour. |  | Velocity Exceeding 40 Miles per Hour. |  |  |  | Velocity Fell below 30 Miles per Hour. |  | Total No. of Hours the Vel. above 30 Mls. | Maximum Velocity. |  |  | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Com-menced. | Direction of Wind. | Com-menced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. |  | Hour. | Direction of Wind. | Velocity. |  |
| Jan. 6-9, 1878. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Holy-head. | 6 p.m. (6th). | W.byN. | 2 p.m. (7th).<br>6 p.m. (7th).<br>11 a.m. (8th). | N.W.<br>N.E.<br>N.E. | 42<br>51<br>45 | 1<br>16<br>18 | 11 a.m. (9th). | N.E.byE. | 65 | 8 p.m. (7th).<br>11 p.m. (7th). | N.E.<br>N.E.bN. | 57 | — |
| Valencia | 7 p.m. (7th). | N.W.byN. | — | — | — | — | 10 p.m. (7th). | N. by W. | 3 | 8 p.m. (7th).<br>9 p.m. (7th). | N.N.W.<br>N.byW. | 32 | — |
| Fal-mouth | 9 p.m. (7th). | N.W.b.W. | — | — | — | — | Midt. (7th). | N.N.W. | 3 | 10 p.m. (7th).<br>11 p.m. (7th). | N.W.<br>N.W.b. N. | 32 | — |
|  | 11 a.m. (8th). | N. by E. | — | — | — | — | 2 p.m. (8th). | N. by E. | 3 | 11 a.m. (8th). | N. by E. | 34 | — |
| Yar-mouth | 8 a.m. (8th). | N.E. | — | — | — | — | Noon (8th). | N.N.E. | 4 | 10 a.m. (8th). | N.E. | 36 | — |
|  | 1 p.m. (8th). | N.E.byN. | — | — | — | — | 3 p.m. (8th). | N.E. by N. | 2 | 1 p.m. (8th).<br>2 p.m. (8th). | N.E.by N.<br>N.E. | 31 | — |
|  | 4 p.m. (8th). | N.E.byN. | — | — | — | — | 11 p.m. (8th). | N.E.byE. | 7 | 9 p.m. (8th). | N.E.byE. | 35 | — |

## No. 2. (Cyclonic System, No. 4.)

| Stations. | Com-menced. | Direction of Wind. | Com-menced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | Total No. of Hours the Vel. above 30 Mls. | Hour. | Direction of Wind. | Velocity. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan. 20-22, 1878. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sandwick | 8 p.m. (20th). | S. | 10 p.m. (20th). | S. by E. | 49 | 12 | 1 p.m. (21st). | N.W.b.W. | 17 | 1&5 a.m. (21st). | W. by S. | 58 | — |
| Glasgow | 7 p.m. (20th). | S. | — | — | — | — | 2 a.m. (21st). | S.W.b.W. | 7 | Midt. (20th).<br>1 a.m. (21st). | S.S.W. | 36 | — |
| Alnwick Castle. | — | — | Midt. (20th). | S.W.byW. | 62 | 7 | 7 a.m. (21st). | W.N.W. | 7 | 1 a.m. (21st). | W.S.W. | 77 | — |
| Seaham | 11 p.m. (20th). | S.W. by S. | 1 a.m. (21st). | S.W. | 43 | 7 | 9 a.m. (21st). | W. by S. | 10 | 5 a.m. (21st). | S.W.byW. | 47 | — |
| Stony-hurst. | 10 p.m. (21st). | S.W.byW. | — | — | — | — | Midt. (21st). | W.S.W. | 2 | 10&11 p.m. (21st). | S.W.byW. | 33 | — |
| Holyhead | 4 p.m. (20th). | S.S.W. | 7 p.m. (20th).<br>11 a.m. (21st).<br>2 p.m. (21st).<br>8 p.m. (21st). | S.S.W.<br>S.W. byS.<br>S.W. byS.<br>S.W. | 45<br>41<br>41<br>41 | 13<br>1<br>5<br>2 | Midt. (21st). | W. by S. | 32 | 1 a.m. (21st). | S.W. by S. | 51 | — |
| Armagh | 6 p.m. (20th). | S. by W. | — | — | — | — | 10 p.m. (20th). | S.W. by S. | 4 | 8 p.m. (20th). | S.S.W. | 39 | — |
|  | 11 p.m. (20th). | S.W.byS. | — | — | — | — | 5 a.m. (21st). | W. by S. | 6 | 2 a.m. (21st). | SW. by S. | 37 | — |
| Valencia | Noon (20th). | S. byW. | 1 p.m. (20th).<br>2 a.m. (21st). | S.<br>S.W.byW. | 45<br>48 | 11<br>21 | 11 p.m. (21st). | W.N.W. | 35 | 1 p.m. (21st).<br>3 p.m. (21st). | S.W.<br>S.W. by W. | 56 | — |
| Falmouth | 8 p.m. (20th). | S.W. by S. | 6 p.m. (21st).<br>9 p.m. (21st). | S.W.<br>S.W.byW. | 41<br>40 | 2<br>1 | 9 a.m. (22nd). | S.W.byW. | 37 | 6 p.m. (21st). | S.W. | 41 | — |
| Yarmouth | 6 p.m. (21st). | W. by S. | — | — | — | — | 5 a.m. (22nd). | W. | 11 | 8 & 10 p.m. (21st). | W. by S. | 35 | — |

## No. 3. (CYCLONIC SYSTEM, No. 5.)

| Stations. | VELOCITY 30-40 Miles per Hour. | | VELOCITY Exceeding 40 Miles per Hour. | | | | VELOCITY Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | MAXIMUM VELOCITY. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| Jan. 22-26, 1878. | | | | | | | | | | | | | |
| Sandwick. | 7 a.m. (24th). | N.W. | 8 a.m. (24th). | N.W. | 47 | 17 | ? | — | ? | 8 a.m. (24th). | N.W. | 57 | Clock stopped from Midt. 24th till 11a.m. 25th; the velocity at Midt. was 43 miles, and at 11 a.m. 27 miles per hour. |
| | 9 p.m. (25th). | N. by W. | — | — | — | — | 1 a.m. (26th). | N. by W. | 4 | 10 p.m. (25th). | N. by W. | 34 | |
| Aberdeen. | 7 p.m. (23rd). | W. by S. | — | — | — | — | 11 p.m. (23rd). | W. | 4 | 8&9p.m. (23rd). | W. | 39 | — |
| | 1 a.m. (24th). | W. by N. | 4 a.m. (24th). | W. | 47 | 8 | 3 p.m. (24th). | W.N.W. | 14 | 9 a.m. (24th). | W. by N. | 52 | — |
| | Noon (25th). | W. by N. | — | — | — | — | 2 p.m. (25th). | W.N.W. | 2 | 1 p.m. (25th). | W.N.W. | 34 | At 9 a.m. 25th, the velocity was 36 miles. |
| Glasgow. | 1 p.m. (23rd). | S.W.byW. | — | — | — | — | 7 p.m. (23rd). | W. | 6 | 3 p.m. (23rd). | W.S.W. | 37 | — |
| Alnwick Castle. | 11 p.m. (22nd). | S.W.byW. | — | — | — | — | 2 a.m. (23rd). | W. by S. | 3 | Midt. (22nd). | S.W. | 36 | — |
| | 3 a.m. (23rd). | W. | 11 a.m. (23rd). | W. by S. | 43 | 4 | 5 a.m. (24th). | W.N.W. | 26 | Noon & 2 p.m. (23rd). | W.S.W. | 44 | — |
| Seaham | 11 p.m. (23rd). | W. by N. | — | — | — | — | 3 a.m. (24th). | W. by N. | 4 | 1 a.m. (24th). | W. | 32 | — |
| Stonyhurst. | 3 a.m. (23rd). | W.S.W. | — | — | — | — | 7 a.m. (23rd). | S.W.byW. | 4 | 4 a.m. (23rd). | W.S.W. | 33 | — |
| | Noon (23rd). | W.S.W. | — | — | — | — | 6 a.m. (24th). | W. by N. | 18 | 6&9p.m. (23rd). | W. by S. | 37 | — |
| Holyhead. | — | — | 10 p.m. (22nd). | S.W. | 41 | 1 | 10 a.m. (24th). | N.W. | 36 | 6&9p.m. (23rd). | W.N.W. | 49 | — |
| | | | 2 a.m. (23rd). | W. by N. | 40 | 1 | | | | | | | |
| | | | 6 a.m. (23rd). | W. | 42 | 4 | | | | | | | |
| | | | 11 a.m. (23rd). | W. | 42 | 2 | | | | | | | |
| | | | 2 p.m. (23rd). | W. | 45 | 15 | | | | | | | |
| | Midt. (24th). | W.N.W | 3 a.m. (25th). | W.N.W. | 51 | 4 | 8 a.m. (26th). | N. by W. | 32 | 6 p.m. (25th). | N.W.b.N. | 65 | — |
| | | | 9 a.m. (25th). | N.N.E. | 54 | 17 | | | | | | | |
| Valencia. | 2 p.m. (22nd). | W.S.W. | 5 p.m. (22nd). | S.W. | 47 | 3 | 1 a.m. (24th). | W.N.W. | 35 | 6 p.m. (22nd). | S.W. | 51 | — |
| | | | 9 p.m. (22nd). | W. by S. | 42 | 9 | | | | | | | |
| | | | 8 a.m. (23rd). | W. by N. | 43 | 2 | | | | | | | |
| | | | 11 a.m. (23rd). | W. by N. | 44 | 10 | | | | | | | |
| Falmouth. | 8 p.m. (22nd). | W.S.W. | Noon (23rd). | W. by N. | 40 | 1 | 1 a.m. (24th). | N.W.b.W. | 29 | 6 p.m. (23rd). | W.N.W. | 43 | — |
| | | | 6 p.m. (23rd). | W.N.W. | 41 | 3 | | | | | | | |
| | 7 a.m. (24 th | W.by N. | 8 a.m. (24th). | W. by N. | 44 | 1 | 8 p.m. (24th). | N.W.b.N. | 13 | 2 p.m. (24th). | W. by N. | 53 | — |
| | | | 1 p.m. (24th). | W. by N. | 47 | 6 | | | | | | | |
| | 5 a.m. (25th). | N.W. by W. | 6 a.m. (25th). | W.N.W. | 40 | 1 | 3 a.m. (26th). | N.W.b.N. | 22 | 1 p.m. (25th). | N.W.b.W. | 50 | — |
| | | | 11 a.m. (25th). | N.W.b.W. | 45 | 6 | | | | | | | |
| Yarmouth. | 11 a.m. (23rd). | W. | — | — | — | — | 3 p.m. (23rd). | W. | 4 | Noon (23rd). | W. | 35 | — |

## No. 4. (Cyclonic System, No. 13.)

| Stations. | Velocity 30–40 Miles per Hour. | | Velocity Exceeding 40 Miles per Hour. | | | | Velocity Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | Maximum Velocity. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| Mar. 7-8, 1878. | | | | | | | | | | | | | |
| Sandwick. | 10 a.m. (7th). | W. | Noon (7th).<br>3 a.m. (8th).<br>3 p.m. (8th).<br>8 p.m. (8th). | W. by N.<br>N.N.W.<br>N.W.byN.<br>N.N.W. | 59<br>47<br>41<br>40 | 14<br>11<br>3<br>1 | 10 p.m. (8th). | N.N.W. | 36 | 8&9p.m. (7th). | W.N.W. | 71 | — |
| Aberdeen. | — | — | 1 p.m. (7th). | W. by S. | 44 | 2 | 4 p.m. (7th). | W. by N. | 3 | 2 p.m. (7th). | W. by S. | 47 | — |
| | 5 p.m. (7th). | W. | 6 p.m. (7th).<br>5 a.m. (8th). | W. by N.<br>W. by N. | 43<br>41 | 8<br>1 | 6 a.m. (8th). | N.W.b.W. | 13 | 7&8p.m. (7th). | W. by N. | 47 | — |
| | 1 p.m. (8th). | N.W. | — | — | — | — | 4 p.m. (8th). | N.W.byN. | 3 | 2 p.m. (8th). | N.W. | 35 | — |
| Glasgow. | 9 a.m. (7th). | W. | 11 a.m. (7th).<br>3 p.m. (7th).<br>5 p.m. (7th). | W.N.W.<br>W.N.W.<br>W.N.W. | 40<br>41<br>41 | 1<br>1<br>1 | 3 a.m. (8th). | W.N.W. | 18 | 3&5p.m. (7th). | W.N.W. | 41 | — |
| | 10 a.m. (8th). | N.W. | — | — | — | — | Noon (8th). | N.W.b.W. | 2 | 10 a.m. (8th.) | N.W. | 33 | — |
| Alnwick Castle. | 8 a.m. (7th). | W.S.W. | — | — | — | — | 10 a.m. (7th). | W.S.W. | 2 | 9 a.m. (7th). | W.S.W. | 35 | — |
| | 11 a.m. (7th). | W. | 2 p.m. (7th).<br>1 a.m. (8th). | W.<br>N.W.b.W. | 43<br>41 | 10<br>1 | 5 a.m. (8th). | N.W.b.W. | 18 | 8&9p.m. (7th). | N.W.b.W. | 47 | — |
| Seaham | Noon (7th). | W. by N. | — | — | — | — | 11 p.m. (7th). | N.W. | 11 | 2 p.m. (7th).<br>6 p.m. (7th).<br>8 p.m. (7th).<br>10 p.m. (7th). | W. by N.<br>W.N.W.<br>N.W.b.W.<br>N.W.b.W. | 33 | — |
| Stonyhurst. | 9 a.m. (7th). | W. by S. | — | — | — | — | Midnt. (7th). | W. | 15 | 2&5p.m. (7th). | W. by S. | 39 | — |
| Holyhead. | 9 a.m. (7th). | W. by N. | — | — | — | — | 1 p.m. (7th). | W. | 4 | 9 & 11 a.m. (7th). | W. by N. | 32 | — |
| | 2 p.m. (7th). | W. by N. | — | — | — | — | 4 p.m. (7th). | W. by N. | 2 | 3 p.m. (7th). | W. by N. | 34 | — |
| | 8 p.m. (7th). | W. | 5 a.m. (8th). | N.W.byN. | 43 | 1 | 11 a.m. (8th). | N.W.b.W. | 15 | 5 a.m. (8th). | N.W.byN. | 43 | 30 miles were also recorded at Noon and 1 p.m. 8th. |
| Falmouth. | Midnt. (7th). | W.N.W. | — | — | — | — | 5 a.m (8th). | W.N.W. | 5 | Midnt. (7th).<br>2 a.m. (8th). | W.N.W. | 36 | — |
| Yarmouth | 7 p.m. (7th). | W.N.W. | Midnt. (7th). | N.W.b.W. | 42 | 2 | 11 a.m. (8th). | N.W.byN. | 16 | 1 a.m. (8th). | N.W.b.W. | 44 | — |

## No. 5. (CYCLONIC SYSTEM, No. 14.)

| Stations. | VELOCITY 30-40 Miles per Hour. | | VELOCITY Exceeding 40 Miles per Hour. | | | | VELOCITY Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | MAXIMUM VELOCITY. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| Mar. 10-12, 1878. | | | | | | | | | | | | | |
| Sandwick. | — | — | 6 p.m. (10th). | W. | 40 | 1 | 2 a.m. (11th). | W. | 8 | 6 p.m. (10th). | W. | 40 | — |
| | 3 a.m. (11th). | W. | 7 a.m. (11th). | W. | 49 | 16 | 5 a.m. (12th). | N.W.byN. | 26 | 10 a.m. (11th). | W. by N. | 61 | — |
| Aberdeen | — | — | 11 a.m. (11th). | W. | 44 | 7 | 1 a.m. (12th). | W.N.W. | 14 | 1 p.m. (11th). | W. by N. | 48 | — |
| | | | 11 p.m. (11th). | W.N.W. | 40 | 1 | | | | | | | |
| Glasgow. | 9 a.m. (11th). | W.S.W. | — | — | — | — | 1 p.m. (11th). | W. | 4 | Noon (11th). | W. | 31 | — |
| | 2 p.m. (11th). | W. | — | — | — | — | 4 p.m. (11th). | W. | 2 | 2&3p.m. (11th). | W. | 31 | — |
| Alnwick Castle. | 7 a.m. (11th). | W. by S. | — | — | — | — | 9 a.m. (11th). | W. by S. | 2 | 7 a.m. (11th). | W. by S. | 35 | — |
| | 10 a.m. (11th). | W. by N. | — | — | — | — | 3 p.m. (11th). | W.N.W. | 5 | 11 a.m. (11th). | W. | 34 | — |
| | 6 p.m. (11th). | W.N.W. | — | — | — | — | 8 p.m. (11th). | W.N.W. | 2 | 7 p.m. (11th). | W.N.W. | 31 | — |

## No. 6. (CYCLONIC SYSTEM, No. 16.)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mar. 28-30, 1878. | | | | | | | | | | | | | |
| Sandwick | — | — | 8 p.m. (29th). | N.N.E. | 40 | 2 | 6 a.m. (30th). | N. by W. | 10 | 8 p.m. (29th).<br>9 p.m. (29th). | N.N.E.<br>N.byE. | 40 | Clock stopped from 1 a.m. till 11 a.m. 29th. |
| Seaham. | 3 a.m. (29th). | N.E. | — | — | — | — | 8 a.m. (29th). | N.E. | 5 | 5 a.m. (29th). | N.E. | 39 | — |
| | — | — | 8 p.m. (29th). | N. | 47 | 1 | 10 p.m. (29th). | N. by W. | 2 | 8 p.m. (29th). | N. | 47 | — |
| Holyhead. | 10 a.m. (28th). | E. by S. | 2 p.m. (28th). | E. by S. | 41 | 1 | 2 a.m. (31st). | N.W.byN. | 64 | 11 a.m. (29th). | N.E. by E. | 56 | — |
| | | | 9 p.m. (28th). | E. by S. | 41 | 3 | | | | | | | |
| | | | 1 a.m. (29th). | E by N. | 47 | 23 | | | | | | | |
| | | | 2 a.m. (30th). | N. by E. | 44 | 2 | | | | | | | |
| | | | 6 a.m. (30th). | N.N.E. | 43 | 12 | | | | | | | |
| Valencia. | 1 a.m. (29th). | N.E. | 3 a.m. (29th). | N.E. | 41 | 1 | 5 p.m. (29th). | N. by E. | 16 | 3 a.m. (29th). | N.E. | 41 | — |
| | | | Noon (29th). | N.E. by N. | 40 | 1 | | | | | | | |
| Falmouth. | 3 a.m. (29th). | N.E. by N. | 4 a.m. (29th). | N.N.E. | 42 | 1 | 1 a.m. (30th). | N. | 22 | 11 a.m. (29th). | N.N.E. | 57 | — |
| | | | 7 a.m. (29th). | N.E. by N. | 47 | 11 | | | | | | | |
| | | | 8 p.m. (29th). | N. by E. | 40 | 1 | | | | | | | |
| | 7 a.m. (30th). | N.W.byN. | — | — | — | — | 10 a.m. (30th). | N. | 3 | 9 a.m. (30th). | N.W.byN. | 38 | — |
| | Noon (30th). | N.N.W. | — | — | — | — | 6 p.m. (30th). | N.N.W. | 6 | 1 p.m. (30th). | N.N.W. | 37 | — |
| Kew | 4 p.m. (28th). | E. by N. | — | — | — | — | 6 p.m. (28th). | E.N.E. | 2 | 5 p.m. (28th). | E. by N. | 32 | — |
| | Midnt. (28th). | E.N.E. | — | — | — | — | 3 a.m. (29th). | N.E. by E. | 3 | 2 a.m. (29th). | N.E. by E. | 36 | — |
| | 11 a.m. (29th). | N.E. by N. | — | — | — | — | 5 p.m. (29th). | N.E. by N. | 6 | 1 p.m. (29th). | N.E. by N. | 38 | — |
| Yarmouth. | 4 p.m. (28th). | E. | 8 p.m. (28th). | E. by N. | 52 | 27 | 7 a.m. (30th). | N. | 39 | 7 a.m. (29th). | N.E. by E. | 64 | — |
| | — | — | 11 a.m. (30th). | N. by E. | 45 | 3 | 6 p.m (30th). | N. | 7 | Noon (30th). | N.N.E. | 49 | — |

## TABLE OF ANTICYCLONIC SYSTEMS—JANUARY-MARCH, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. I. **January 1-3.** | No. II. **January 8-22.** | No. III. **January 29—February 9.** | No. IV. **February 10—March 22.** |
|---|---|---|---|---|
| **Form** | Oval | Oval | Varying very much, but for the most part somewhat elliptical. | Elliptical. |
| **Size** | Large | Large | Large | Large. |
| **Height** | Small. Max. 30·5 ins. on 1st. | Moderate. Max. 30·8 ins. on 13th and 14th. | Small. Max. 30·6 ins. on 31st and 1st, 5th to 8th. | Moderate. Max. 30·7 ins. on 21st February and March 5th and 6th. |
| **Where first Observed** | South-western coast of France | North-west of the British Islands. | Over Spain and the Bay of Biscay. | Over France. |
| **Direction of Motion** | Moved slightly to the north, and became more extended, then travelled to the south. | South-east till 15th, then west, changing to north on 16th, east on 19th, and south on 20th. | Northerly till 2nd, then westerly, returning easterly on 4th, changing to south-easterly and southerly on 9th. | Moved about in almost all directions in south-western Europe. |
| **Rate of Motion** | Very slow | Slow | Moderate to very slow, being at times almost stationary. | At times moderate, at other times stationary. |
| **Regions passed over** | France and the United Kingdom. | The British Isles and the whole of south-western Europe. | Western Europe | South-western Europe. |
| **Termination** | Passed away over the Peninsula. | Travelled away to the southward. | Travelled to the south of France. | Passed off to the Atlantic. |
| **Accompanying Wind** | Southerly over the British Isles and western coast of France, Westerly or North-westerly in the Netherlands, and North-easterly in the Mediterranean. | Varying between South and North-west over our area, as the position of the system changed. | North-westerly, becoming very variable in these Islands when the centre was in their neighbourhood, and North-easterly to Easterly in France. | Varying very much as the centre shifted, but in the British Isles it was usually from a point between South-west and North-west. |
| **„ Weather** | Rather cold and overcast, with slight mist and fog. | Moderately fine, cold, and frosty, but thick fog prevailed at some places. | Fine, cold, and hazy, with fog at times. | Cold and dry, but dull and foggy. |
| **REMARKS** | This system had become developed over south-western Europe during the closing days of the previous year. It moved southward again under the influence of a series of depressions which reached our northern coasts. | This appears to have been a re-development of the previous system, which had again moved to the northward in the rear of the depressions which had visited northern Europe. | Two distinct systems of high pressure were shown over western Europe on the 29th, one in the south, the other over Scandinavia; these became united on the following day, and formed the system described above. | This was a re-development of the preceding system, which never wholly disappeared from our area. The passage of a series of depressions along our western and north-western coasts kept the centre of the system over the Continent for some days, but eventually it extended itself to our southern coasts, and still later covered the British Isles. It became dispersed under the influence of a series of depressions which reached our northern coasts and Scandinavia towards the end of the month. |

## NOTES to accompany the ANTICYCLONIC TABLES.

January 4th–7th.—During the first two days of this interval the barometer readings were very uniform, and relatively high over the British Isles and France, but the highest pressure was apparently to the south-west of our coasts throughout the whole period.

January 23rd–28th.—The highest pressure lay over the Peninsula during the whole of this period, but on the 26th it stretched an arm over the Bay of Biscay, which afterwards extended over France and Germany. Simultaneously with this movement an area of high pressure appeared over Lapland, but by the close of the 28th a band of lower pressure had extended itself in a south-easterly direction from the North Sea across the Netherlands and Germany between the two systems of high pressure.

March 23rd–31st.—For the first half of this interval pressure was highest in the South-west. On the 27th and 28th, however, higher readings were reported from Lapland, but they had disappeared by the 29th, and pressure had become low over the whole of western Europe, the highest pressures being found over eastern Russia.

## SECTION III.

### Remarks for January, 1878.

(*Tables A. to C., January, with Monthly Wind and Weather Charts.*)

*Wind.*—Speaking generally the prevailing direction during the month was Westerly, but, as the wind chart will show, at many stations the percentage of wind directions was pretty evenly distributed from between South-west and North-east. The month began with light South-westerly winds and calms, which continued with very little change during the first three days. On the 4th an Easterly breeze appeared over Scotland and the northern counties of England, but did not continue long, and next day South-west again became the general direction. On the 6th it veered to West, and became a little stronger, and two days later it veered still further to North and North-east, and blew freshly, and although the force decreased the direction continued Northerly till the close of the 10th, when it became very variable and light. On the 12th it blew again from between South-west and West, and veering somewhat it continued to blow from West or North-west till the close of the 17th. Light and variable anticyclonic airs again prevailed on the 18th, and were followed by Southerly and South-westerly winds, which on the 21st veered to West and freshened, blowing strongly in places. The force became less on the 22nd, and at many stations it fell calm, but next day it increased again, and a Westerly gale was felt in places, after which the direction veered somewhat, and by the close of the 25th it had become generally Northerly. Twenty-four hours later it was again backing to South, and for the next two or three days it continued to blow with moderate force from between South and West, after which light anticyclonic airs were again experienced till the close of the month, the most prevalent direction over southern England being Easterly.

*Pressure.*—The mean pressure for the month was considerably above the average, and its distribution in accordance with the prevalent Westerly wind already mentioned as having been experienced. The lowest mean values were in the north, where they were more than four tenths of an inch lower than those observed at the mouth of the channel. The lowest readings occurred during the unsettled weather which prevailed from the 23rd to the 25th when the barometer at Aberdeen fell to 28·910 inches; at the southern stations, however, and in Ireland it did not fall much below 29·5 inches. The highest readings were recorded over southern England on the 12th, and at Falmouth a reading of 30·722 inches was recorded; in other parts of the kingdom, however, the maximum pressures were not recorded till the 31st, with the anticyclonic system which then existed over Great Britain. The range of pressure was greatest in Scotland, where it amounted to 1·668 inches at Aberdeen, while at Falmouth it was only 1·243 inches.

*Movements of the Depressions.*—The depressions which were observed during the month sufficiently near to be felt over the British Isles were very few and generally unimportant. As a rule they travelled in an easterly or north-easterly direction, but at a considerable distance to the northward of our Islands. One of the deepest, however, followed a more southerly course and crossed the Shetlands on its way to the southern Baltic, while another, earlier in the month, skirted the eastern coast of Scotland and travelled southeastwards across the North Sea to the Netherlands and finally disappeared over the Adriatic.

*Temperature.*—The mean temperature ranged from 38° in the north-east of Scotland to nearly 48° at Scilly, and was therefore slightly above the average for the month. The maxima occurred most generally on the 20th or 21st, and the minima either with the anticyclonic systems which prevailed about the 11th, and again at the close of the month, or during the continuance of the Northerly winds which were general on the 25th and 26th.

As a rule the minima were not very low, 18° at Buxton and 18°·5 at Glenalmond, being the only instances in which the thermometer fell below 20°. The maxima, however, were almost invariably above 50°, and at Cambridge the thermometer rose as high as 59°, while at three or four other places in England and Wales it exceeded 57°. The range of temperature was not great—generally between 25° and 30°, and at no station was the latter amount much exceeded.

*Vapour Tension* decreased with tolerable uniformity from the south-west of England to the north-east of Scotland. *Relative Humidity* on the other hand was very uniform over the whole kingdom.

*Rainfall* was generally slight although heavy falls were recorded locally, the largest monthly total being 8·55 inches at Buxton, while over most of the southern half of England it did not amount to 2 inches. There were no exceptionally heavy daily falls, the largest being under an inch and a half, while an inch was only reached at four stations.

TABLE A.—Showing the Mean and Extreme Pressures and Temperatures recorded at each of the Seven Self-recording Observatories of the Meteorological Office during the Month of January 1878, together with the Monthly Vapour Tension, the Relative Humidity, and Total Rainfall.

| Names of Observatories. | Pressure at 32° F. and the Mean Sea Level (In English Inches). | | | | | | Temperature In the Shade (In Degrees Fahrenheit). | | | | | | Hygrometric Values. | | Rainfall (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation = 100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia - - | 30·194 | 29·583 | 24th, 1 p.m. | 30·667 | 31st, Midt. | 1·084 | 47·0 | 32·1 | 10th, 2 a.m. | 55·1 | 21st, 11 a.m. | 23·0 | ·277 | 87 | 5·616 |
| Armagh - - | ·113 | ·479 | 25th, 2 a.m. | ·701 | 31st, 10 p.m. | 1·222 | 41·3 | 27·7 | 25th, 10 a.m. | 53·4 | 21st, 3 a.m. | 25·7 | ·236 | 92 | 3·440 |
| Glasgow - - | 30·020 | 29·139 | 23rd, 4 p.m. | ·627 | 31st, 9 p.m.<br>10 p.m. | 1·488 | 39·0 | 20·7 | 11th, 8 a.m. | 49·8 | 21st, 2 a.m. | 29·1 | ·207 | 87 | 4·452 |
| Aberdeen - | 29·969 | 28·910 | 23rd, 4 p.m. | ·578 | 31st, 11 a.m. | 1·668 | 37·7 | 24·0 | 25th, 5 a.m. | 52·0 | 16th, 5 a.m. | 28·0 | ·189 | 83 | 1·510 |
| Falmouth - | 30·250 | 29·479 | 24th, 4 p.m. | ·722 | 12th, 10 a.m. | 1·243 | 45·3 | 32·0 | 25th, 2 p.m. | 53·3 | 21st, Noon | 21·3 | ·250 | 83 | 3·680 |
| Stonyhurst - | ·100 | ·284 | 25th, 5 a.m. | ·676 | 31st, 10 p.m. | 1·392 | 39·7 | 26·0 | 30th, 5 a.m.<br>8 a.m. | 52·4 | 21st, 5 a.m. | 26·4 | ·214 | 88 | 5·047 |
| Kew - - | 30·167 | 29·376 | 25th, 9 a.m. | 30·703 | 12th, 10 a.m. | 1·327 | 40·8 | 26·4 | 11th, 10 p.m. | 54·7 | 21st 3 p.m.<br>22nd, 2 p.m. | 28·3 | ·217 | 86 | 1·185 |

TABLE B., JANUARY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Means of | | | Absolute Extremes. | | | |
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| 0. SCOTLAND, N. - | Sandwick Manse (Orkneys) - - | ins.<br>29·882 | °<br>39·4 | °<br>39·0 | °<br>39·2 | °<br>36·2 | °<br>43·7 | °<br>40·0 | °<br>24·5 | 25th | °<br>51·0 | 3rd |
| 1. SCOTLAND, E. - | Glenalmond - - - | 30·009 | 34·2 | 36·0 | 35·1 | 30·1 | 42·7 | 36·4 | 18·5 | 22nd | 51·7 | 15th, 16th, 18th. |
| 2. ENGLAND, N.E. - | Seaham - - - | 30·033 | 38·9 | 39·4 | 39·2 | 34·8 | 44·6 | 39·7 | 21·3 | 25th | 53·4 | 21st |
| | Durham* - - - | 30·042 | 38 7 | 38·1 | 38·4 | 33·4 | 44·0 | 38·7 | 21·7 | 25th | 53·1 | 22nd |
| | Hull - - - - | 30·089 | 38·8 | 39·2 | 39·0 | 35·2 | 44·3 | 39·8 | 24·4 | 25th | 56·5 | 21st, 29th |
| | Kelstern 𝔐 - - - | 30·105 | 36·9 | 36·8 | 36·9 | 33·8 | 42·0 | 37·9 | 22·8 | 25th | 53·9 | 21st |
| 3. ENGLAND, E. - | Hillington 𝔐 - - - | 30·099 | 37·7 | 38·2 | 38·0 | 33·6 | 43·8 | 38·7 | 21·3 | 11th | 55·4 | 15th |
| | Audley End 𝔐 - - | 30·132 | 38·3 | 38·1 | 38·2 | 34·2 | 44·0 | 39·1 | 20·0 | 11th | 56·2 | 22nd |
| | Chigwell Row - - - | 30·185 | 39·4 | 39·7 | 39·6 | 36·0 | 44·4 | 40·2 | 28·3 | 25th | 55·0 | 21st |
| 4. MIDLAND COUNTIES. | Wakefield 𝔐 - - - | 30·104 | 39·8 | 40·5 | 40·2 | 35·4 | 45·2 | 40·3 | 25·2 | 30th | 57·0 | 21st |
| | Buxton 𝔐 - - - | 30·143 | 37·5 | 37·8 | 37·7 | 34·0 | 42·2 | 38·1 | 18·0 | 30th | 51·8 | 21st |
| | Cheadle 𝔐 - - - | 30·144 | 37·8 | 38·6 | 38·2 | 35·3 | 41·5 | 38·4 | 24·0 | 25th | 53·2 | 21st |
| | Leicester - - - | 30·137 | 39·4 | 40·7 | 40·1 | 36·6 | 44·8 | 40·7 | 26·0 | 25th | 55·9 | 21st |
| | Uppingham - - - | 30·128 | 37·7 | 38·4 | 38·1 | 34·6 | 43·2 | 38·9 | 25·8 | 25th | 54·0 | 21st, 22nd |
| | Oscott - - - - | 30·143 | 38·5 | 39·6 | 39·1 | 35·9 | 43·8 | 39·9 | 23·4 | 30th | 54·4 | 21st |
| | Churchstoke 𝔐 - - | 30·170 | 39·2 | 39·9 | 39·6 | 35·2 | 44·7 | 40·0 | 25·0 | 30th | 54·2 | 21st |
| | Hereford 𝔐 - - - | 30·162 | 40·4 | 41·2 | 40·8 | 36·8 | 46·1 | 41·5 | 24·9 | 30th | 57·8 | 21st |
| 5. ENGLAND, S. - | Marlborough 𝔐 - - | 30·192 | 38·5 | 39·5 | 39·0 | 35·6 | 45·0 | 40·3 | 25·3 | 30th | 54·7 | 21st |
| | Strathfield Turgiss 𝔐 - | 30·185 | 39·6 | 40·0 | 39·8 | 35·0 | 45·0 | 40·0 | 21·7 | 12th | 54·1 | 22nd |
| | Ramsgate 𝔐 - - - | 30·149 | 39·8 | 40·2 | 40·0 | 36·1 | 44·2 | 40·2 | 28·2 | 27th | 53·2 | 22nd |
| | Folkestone - - - | 30·166 | 39·9 | 39·8 | 39·9 | 35·8 | 44·1 | 40·0 | 27·6 | 25th | 57·7 | 15th |
| | Southampton† - - - | 30·197 | 41·0 | 41·3 | 41·2 | 37·1 | 45·9 | 41·5 | 24·5 | 12th | 53·6 | 23rd |
| | Hastings - - - | 30·182 | 39·8 | 40·0 | 39·9 | 36·8 | 44·1 | 40·5 | 28·9 | 25th | 51·5 | 15th |
| 6. SCOTLAND, W. - | —— | — | — | — | — | — | — | — | — | — | — | — |
| 7. ENGLAND, N.W. - | Douglas - - - | — | 39·9 | 40·1 | 40·0 | — | — | — | — | — | — | — |
| | Prestwich - - - | 30·107 | 39·8 | 39·6 | 39·7 | 35·9 | 44·1 | 40·0 | 25·2 | 25th | 55·0 | 21st |
| | Llandudno 𝔐 - - | 30·126 | 42·5 | 43·2 | 42·9 | 39·6 | 47·4 | 43·5 | 28·0 | 25th | 57·9 | 21st |
| 8. ENGLAND, S.W. - | Caermarthen 𝔐 - - | 30·186 | 42·9 | 42·1 | 42·5 | 38·6 | 47·7 | 43·2 | 24·5 | 11th | 55·1 | 15th |
| | Dartmoor 𝔐 - - - | 30·228 | 38·0 | 38·0 | 38·0 | 34·6 | 42·2 | 38·4 | 25·0 | 12th | 48·6 | 22nd |
| | Babbacombe 𝔐 - - | 30·222 | 42·1 | 42·1 | 42·1 | 38·6 | 47·2 | 42·9 | 24·4 | 12th | 54·8 | 15th |
| 9. IRELAND, N. - | Markree Castle - - | 30·115 | 41·2 | 42·1 | 41·7 | 37·6 | 46·8 | 42·2 | 26·7 | 11th | 54·6 | 21st |
| 10. IRELAND, S. - | Dublin - - - - | 30·153 | 42·0 | 43·1 | 42·6 | 39·2 | 47·1 | 43·2 | 28·0 | 31st | 56·7 | 21st |
| | Parsonstown - - - | 30·173 | 41·0 | 41·8 | 41·4 | 37·4 | 47·0 | 42·2 | 26·3 | 11th | 56·1 | 21st |
| CHANNEL - - | Jersey (St. Aubin's) - - | 30·275 | 44·9 | 44·3 | 44·6 | 40·8 | 47·7 | 44·3 | 33·3 | 11th, 25th | 54·9 | 15th, 17th |

NOTE.—The stations marked thus 𝔐 are in connexion with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of JANUARY 1878.
corrected for Diurnal Range.

Latitude, beginning in each case with the Station lying furthest North.)

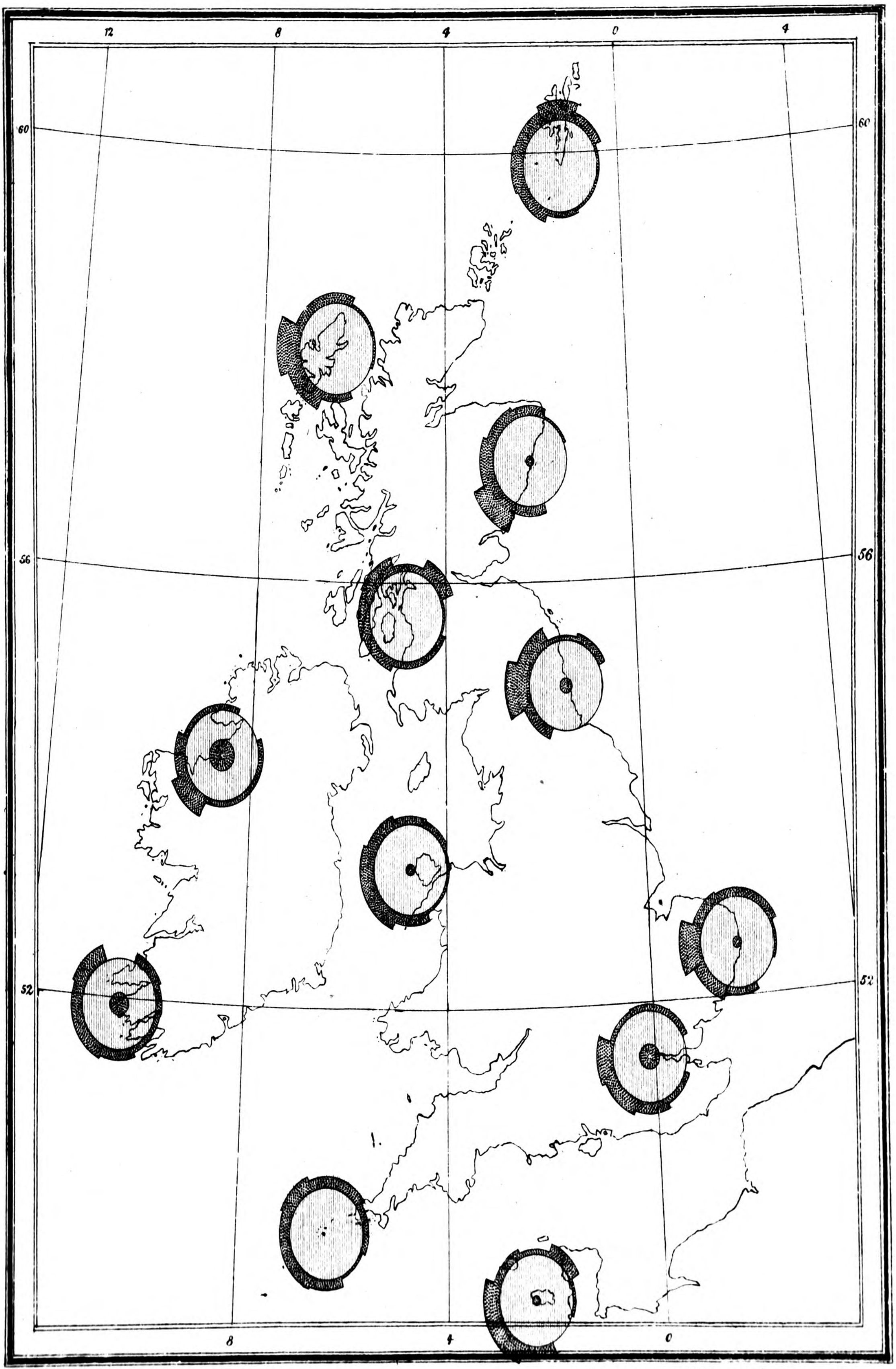
| Tension of Vapour. At 9 a.m. | Tension of Vapour. At 9 p.m. | Tension of Vapour. Mean of 9 a.m. and 9 p.m. | Relative Humidity. At 9 a.m. | Relative Humidity. At 9 p.m. | Relative Humidity. Mean of 9 a.m. and 9 p.m. | Amount of Cloud (0 to 10). At 9 a.m. | Amount of Cloud (0 to 10). At 9 p.m. | Amount of Cloud (0 to 10). Mean of 9 a.m. and 9 p.m. | Rainfall. Total Fall in the Month. | Rainfall. Maximum Fall in One Day. | Rainfall. Date. | Weather, No. of Days of Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | Wind, No. of Observations of North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·214 | ·214 | ·214 | 89 | 90 | 90 | 6·5 | 7·0 | 6·8 | 3·760 | ·420 | 15th | 30 | 9 | 1 | 0 | 1 | 11 | 4 | 5 | 3 | 1 | 2 | 10 | 9 | 16 | 12 | 4 |
| ·177 | ·198 | ·188 | 87 | 91 | 89 | 5·4 | 6·0 | 5·7 | 3·595 | 1·410 | 20th | 13 | 7 | 0 | 0 | 3 | 8 | 2 | 1 | 3 | 6 | 2 | 9 | 16 | 15 | 8 | 2 |
| ·215 | ·220 | ·218 | 91 | 91 | 91 | 5·1 | 5·1 | 5·1 | 1·833 | ·455 | 27th | 15 | 4 | 4 | 0 | 9 | 9 | 0 | 3 | 5 | 0 | 0 | 8 | 12 | 21 | 11 | 2 |
| ·214 | ·208 | ·211 | 89 | 88 | 89 | 5·8 | 6·3 | 6·1 | 2·511 | ·490 | 21st | 14 | 5 | 2 | 0 | 4 | 12 | 1 | 3 | 3 | 0 | 0 | 12 | 18 | 13 | 12 | 1 |
| ·220 | ·220 | ·220 | 94 | 92 | 93 | 6·6 | 5·1 | 5·9 | 2·640 | ·520 | 27th | 23 | 2 | 0 | 0 | 5 | 10 | 1 | 4 | 2 | 0 | 1 | 4 | 16 | 11 | 11 | 13 |
| ·211 | ·215 | ·213 | 95 | 97 | 96 | 6·7 | 6·1 | 6·4 | 2·379 | ·546 | 27th | 24 | 7 | 2 | 0 | 2 | 11 | 0 | 8 | 2 | 2 | 1 | 4 | 17 | 13 | 14 | 1 |
| ·218 | ·221 | ·220 | 94 | 93 | 94 | 7·5 | 8·0 | 7·8 | 2·058 | ·370 | 27th | 20 | 5 | 1 | 0 | 2 | 16 | 0 | 4 | 8 | 1 | 2 | 2 | 22 | 7 | 13 | 3 |
| ·219 | ·218 | ·219 | 92 | 93 | 93 | 7·1 | 6·5 | 6·8 | 1·700 | ·380 | 27th | 19 | 6 | 2 | 0 | 3 | 12 | 0 | 5 | 0 | 0 | 2 | 1 | 16 | 6 | 20 | 12 |
| ·218 | ·218 | ·218 | 91 | 89 | 90 | 8·2 | 7·6 | 7·9 | 1·430 | ·310 | 27th | 12 | 3 | 1 | 0 | 2 | 18 | 2 | 12 | 5 | 3 | 1 | 4 | 13 | 12 | 8 | 4 |
| ·220 | ·222 | ·221 | 87 | 86 | 87 | 7·3 | 6·9 | 7·1 | 2·340 | ·640 | 3rd | 16 | 2 | 2 | 1 | 3 | 14 | 0 | 3 | 1 | 0 | 2 | 4 | 7 | 19 | 4 | 22 |
| ·203 | ·206 | ·205 | 88 | 88 | 88 | 8·5 | 8·6 | 8·6 | 8·546 | 1·440 | 13th | 24 | 7 | 0 | 1 | 1 | 21 | 0 | 7 | 7 | 2 | 0 | 0 | 2 | 18 | 21 | 5 |
| ·209 | ·214 | ·212 | 92 | 91 | 92 | 7·8 | 7·8 | 7·8 | 3·240 | ·770 | 27th | 21 | 5 | 0 | 0 | 2 | 19 | 1 | 12 | 3 | 2 | 2 | 8 | 6 | 14 | 11 | 4 |
| ·216 | ·222 | ·219 | 90 | 88 | 89 | 7·7 | 6·3 | 7·0 | 1·570 | ·480 | 27th | 19 | 2 | 0 | 0 | 4 | 16 | 1 | 9 | 1 | 1 | 0 | 3 | 17 | 12 | 13 | 6 |
| ·212 | ·218 | ·215 | 90 | 91 | 91 | 7·5 | 7·4 | 7·5 | 1·413 | ·300 | 3rd | 20 | 6 | 2 | 0 | 4 | 18 | 3 | 5 | 4 | 1 | 0 | 2 | 16 | 8 | 21 | 5 |
| ·221 | ·231 | ·226 | 92 | 93 | 92 | 8·2 | 7·4 | 7·8 | 1·790 | ·520 | 27th | 20 | 6 | 3 | 0 | 1 | 19 | 4 | 9 | 4 | 0 | 1 | 8 | 15 | 11 | 10 | 4 |
| ·223 | ·230 | ·227 | 90 | 90 | 90 | 6·8 | 6·2 | 6·5 | 1·719 | ·407 | 27th | 15 | 4 | 1 | 0 | 4 | 11 | 2 | 3 | 2 | 1 | 1 | 2 | 8 | 20 | 10 | 15 |
| ·226 | ·235 | ·231 | 88 | 88 | 88 | 7·1 | 6·2 | 6·7 | 1·483 | ·570 | 27th | 22 | 2 | 0 | 0 | 1 | 14 | 0 | 3 | 2 | 0 | 0 | 1 | 7 | 12 | 8 | 29 |
| ·227 | ·237 | ·232 | 94 | 95 | 95 | 7·4 | 7·5 | 7·5 | 1·898 | ·485 | 27th | 16 | 2 | 0 | 0 | 4 | 19 | 0 | 2 | 2 | 2 | 0 | 2 | 8 | 22 | 7 | 17 |
| ·219 | ·227 | ·223 | 87 | 90 | 88 | 6·2 | 6·3 | 6·3 | 1·120 | ·350 | 3rd | 12 | 1 | 1 | 0 | 7 | 14 | 0 | 5 | 3 | 2 | 1 | 4 | 12 | 14 | 6 | 15 |
| ·221 | ·218 | ·220 | 89 | 86 | 87 | 7·0 | 6·8 | 6·9 | 1·904 | ·790 | 28th | 12 | 6 | 8 | 0 | 1 | 12 | 1 | 4 | 6 | 1 | 2 | 2 | 18 | 14 | 7 | 8 |
| ·221 | ·221 | ·221 | 90 | 90 | 90 | 7·3 | 6·6 | 7·0 | 1·800 | ·440 | 28th | 16 | 8 | 2 | 0 | 2 | 13 | 2 | 15 | 1 | 2 | 0 | 7 | 8 | 20 | 7 | 2 |
| ·232 | ·238 | ·235 | 88 | 89 | 89 | 7·0 | 6·8 | 6·9 | 1·363 | ·454 | 27th | 14 | 2 | 1 | 0 | 5 | 17 | 0 | 6 | 10 | 0 | 4 | 2 | 18 | 7 | 12 | 3 |
| ·223 | ·223 | ·223 | 89 | 88 | 89 | 6·5 | 6·5 | 6·5 | 1·840 | ·680 | 28th | 17 | 6 | 0 | 0 | 4 | 15 | 3 | 13 | 6 | 2 | 2 | 5 | 13 | 14 | 6 | 1 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | 4·530 | 1·230 | 27th | 19 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·230 | ·225 | ·228 | 94 | 93 | 94 | 7·6 | 6·8 | 7·2 | 4·170 | ·520 | 27th | 23 | 3 | 3 | 0 | 2 | 16 | 0 | 9 | 2 | 1 | 2 | 6 | 8 | 14 | 8 | 12 |
| ·237 | ·241 | ·239 | 86 | 85 | 85 | 7·9 | 6·7 | 7·3 | 2·708 | ·450 | 27th | 18 | 1 | 1 | 0 | 3 | 17 | 3 | 8 | 5 | 3 | 1 | 7 | 7 | 27 | 4 | 0 |
| ·259 | ·258 | ·259 | 92 | 93 | 92 | 6·7 | 6·1 | 6·4 | 3·650 | ·660 | 27th | 21 | 1 | 3 | 0 | 5 | 14 | 0 | 6 | 0 | 1 | 1 | 4 | 12 | 8 | 9 | 21 |
| ·222 | ·225 | ·224 | 94 | 96 | 95 | 8·1 | 7·2 | 7·7 | 5·750 | ·780 | 21st | 20 | 6 | 0 | 0 | 4 | 19 | 4 | 1 | 11 | 0 | 1 | 1 | 14 | 4 | 19 | 11 |
| ·244 | ·243 | ·244 | 89 | 88 | 89 | 6·8 | 7·0 | 6·9 | 1·850 | ·570 | 27th | 12 | 4 | 2 | 1 | 4 | 17 | 3 | 9 | 6 | 0 | 0 | 3 | 12 | 14 | 11 | 7 |
| ·240 | ·248 | ·244 | 91 | 91 | 91 | 7·9 | 8·0 | 8·0 | 5·118 | ·832 | 20th | 25 | 3 | 5 | 1 | 0 | 16 | 0 | 3 | 1 | 2 | 3 | 6 | 15 | 9 | 7 | 16 |
| ·239 | ·247 | ·243 | 87 | 86 | 87 | 7·4 | 7·0 | 7·2 | 1·557 | ·318 | 3rd | 20 | 3 | 3 | 0 | 0 | 11 | 3 | 3 | 1 | 1 | 3 | 2 | 15 | 25 | 4 | 8 |
| ·245 | ·253 | ·249 | 93 | 93 | 93 | 8·5 | 8·3 | 8·4 | 2·858 | ·505 | 3rd | 22 | 3 | 0 | 0 | 0 | 20 | 0 | 1 | 1 | 0 | 8 | 4 | 16 | 12 | 4 | 16 |
| ·250 | ·242 | ·246 | 82 | 82 | 82 | 7·4 | 7·8 | 7·6 | 2·861 | ·874 | 24th | 21 | 0 | 8 | 1 | 1 | 17 | 0 | 7 | 9 | 3 | 0 | 6 | 16 | 4 | 11 | 6 |

## TABLE C., JANUARY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS during the Month of JANUARY 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| Names of Districts. | Names of Stations. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | Air Temperature. | | | | | | | | Tension of Vapour. | Relative Humidity. | Amount of Cloud. | Rainfall. | | | Weather, No. of Days of | | | | | | | Wind, No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Means of | | | Absolute Extremes. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | At 8 a.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. | | | | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| 0. SCOTLAND, N. | Sumburgh Head | 29·819 | 39·5 | 34·1 | 43·0 | 38·6 | 23 | 25th | 49 | 2nd, 3rd | 0·205 | 85 | 7·0 | 3·28 | 0·49 | 13th | 29 | 2 | 0 | 0 | 5 | 13 | 5 | 8 | 3 | 1 | 1 | 2 | 5 | 6 | 5 | 0 |
| | Thurso - - | 29·882 | 37·5 | 32·7 | 44·1 | 38·4 | 25 | 25th | 52 | 20th | ·206 | 92 | 7·2 | 3·87 | 0·46 | 15th | 29 | 5 | 2 | 0 | 4 | 15 | 3 | 1 | 1 | 1 | 1 | 10 | 7 | 4 | 5 | 1 |
| | Wick - - | 29·895 | 37·1 | 32·4 | 43·0 | 37·7 | 23 | 25th, 30th | 52 | 3rd | ·194 | 88 | 6·4 | 1·65 | 0·23 | 15th, 23rd | 22 | 3 | 0 | 0 | 9 | 15 | 3 | 0 | 0 | 1 | 0 | 6 | 4 | 9 | 9 | 2 |
| | Stornoway - | 29·911 | 38·2 | 33·4 | 42·6 | 38·0 | 22 | 25th | 50 | 3rd, 15th | ·206 | 90 | 7·0 | 5·17 | 0·63 | 15th | 31 | 5 | 1 | 0 | 3 | 12 | 8 | 3 | 1 | 1 | 0 | 3 | 8 | 12 | 3 | 0 |
| 1. SCOTLAND, E. | Nairn - - | 29·934 | 37·4 | 33·9 | 42·1 | 38·0 | 24 | 25th | 52 | 3rd | ·194 | 87 | 5·3 | 1·59 | 0·33 | 27th | 13 | 0 | 0 | 0 | 9 | 9 | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 11 | 2 | 13 |
| | Aberdeen - | 29·936 | 37·1 | 33·8 | 42·2 | 38·0 | 25 | 25th | 53 | 15th | ·185 | 84 | 3·6 | 1·48 | 0·60 | 27th | 14 | 3 | 0 | 0 | 16 | 6 | 3 | 3 | 1 | 0 | 0 | 3 | 13 | 6 | 4 | 1 |
| | Leith - - | 30·011 | 38·1 | 34·0 | 45·0 | 39·5 | 23 | 25th, 26th | 55 | 18th | ·207 | 90 | 6·3 | 2·39 | 0·58 | 21st | 13 | 3 | 0 | 0 | 6 | 13 | 1 | 0 | 2 | 1 | 0 | 1 | 5 | 15 | 3 | 4 |
| 2. ENGLAND, N.E. | Shields - - | 30·042 | 39·0 | 34·7 | 44·2 | 39·5 | 23 | 25th, 26th | 54 | 20th | ·205 | 86 | 5·4 | 2·49 | 0·79 | 21st | 19 | 8 | 2 | 1 | 12 | 13 | 7 | 2 | 3 | 0 | 0 | 0 | 4 | 13 | 7 | 2 |
| | Scarborough - | 30·067 | 39·8 | 36·9 | 43·9 | 40·4 | 27 | 26th | 55 | 21st | ·220 | 91 | 7·1 | 2·51 | 0·38 | 27th | 19 | 3 | 1 | 1 | 7 | 17 | 1 | 3 | 3 | 0 | 0 | 2 | 7 | 9 | 7 | 0 |
| | York - - | 30·085 | 38·4 | 34·1 | 44·9 | 39·5 | 24 | 26th, 27th | 56 | 21st | ·214 | 93 | 6·5 | 2·03 | 0·50 | 27th | 22 | 5 | 0 | 0 | 8 | 15 | 3 | 7 | 2 | 0 | 1 | 3 | 6 | 8 | 4 | 0 |
| 3. ENGLAND, E. | Yarmouth - | 30·087 | 38·5 | 34·5 | 42·8 | 38·7 | 24 | 26th, 27th | 55 | 21st | ·213 | 92 | 6·0 | 2·15 | 0·55 | 25th | 22 | 3 | 3 | 0 | 7 | 10 | 4 | 3 | 3 | 1 | 0 | 3 | 5 | 11 | 4 | 1 |
| | Cambridge - | 30·129 | 38·3 | 34·2 | 46·3 | 40·3 | 24 | 12th | 59 | 21st | ·217 | 94 | 7·4 | 1·39 | 0·34 | 27th | 16 | 2 | 0 | 0 | 7 | 20 | 0 | 6 | 0 | 1 | 0 | 7 | 7 | 5 | 5 | 0 |
| 4. MIDLAND COUNTIES. | Nottingham - | 30·134 | 38·6 | 34·6 | 44·8 | 39·7 | 25 | 26th | 56 | 21st | ·214 | 92 | 7·0 | 2·02 | 0·51 | 27th | 19 | 6 | 2 | 0 | 7 | 17 | 1 | 3 | 2 | 0 | 0 | 5 | 7 | 3 | 5 | 6 |
| | Oxford - - | 30·162 | 39·5 | 36·3 | 45·3 | 40·8 | 26 | 31st | 55 | 21st, 22nd | ·219 | 90 | 7·2 | 1·47 | 0·45 | 3rd | 19 | 2 | 0 | 0 | 6 | 17 | 0 | 4 | 0 | 0 | 0 | 5 | 4 | 8 | 1 | 9 |
| 5. ENGLAND, S. | London - - | 30·166 | 39·0 | 35·6 | 45·5 | 40·6 | 25 | 11th, 12th | 56 | 22nd | ·212 | 90 | 7·1 | 1·07 | 0·28 | 28th | 15 | 3 | 1 | 0 | 5 | 16 | 6 | 2 | 2 | 0 | 2 | 4 | 6 | 8 | 2 | 5 |
| | Dover - - | 30·164 | 40·5 | 37·1 | 44·4 | 40·8 | 29 | 26th | 55 | 17tb | ·220 | 88 | 5·5 | 1·47 | 0·38 | 8th | 16 | 5 | 4 | 0 | 8 | 8 | 0 | 6 | 3 | 0 | 1 | 1 | 8 | 8 | 4 | 0 |
| | Hurst Castle - | 30·185 | 42·2 | 37·9 | 45·6 | 41·8 | 24 | 12th | 52 | 15th | ·247 | 91 | 7·2 | 1·41 | 0·43 | 27th | 16 | 1 | 1 | 0 | 6 | 17 | 2 | 7 | 2 | 3 | 1 | 2 | 3 | 8 | 4 | 1 |
| 6. SCOTLAND, W. | Ardrossan - | 30·031 | 40·8 | 37·9 | 45·8 | 41·9 | 26 | 10th | 52 | 15th, 20th | ·215 | 85 | 6·5 | 5·61 | 0·99 | 27th | 21 | 2 | 3 | 0 | 8 | 14 | 7 | 2 | 6 | 1 | 2 | 2 | 5 | 6 | 7 | 0 |
| 7. ENGLAND, N.W. | Liverpool - | 30·114 | 40·7 | 37·5 | 45·3 | 41·4 | 27 | 26th | 55 | 20th, 21st | ·229 | 90 | 7·1 | 2·63 | 0·67 | 3rd | 20 | 0 | 0 | 0 | 6 | 17 | 5 | 4 | 1 | 0 | 4 | 3 | 6 | 8 | 5 | 0 |
| | Holyhead - | 30·121 | 43·2 | 40·4 | 47·1 | 43·8 | 29 | 26th | 53 | 15th, 16th | ·249 | 89 | 6·6 | 2·12 | 0·51 | 3rd | 18 | 1 | 0 | 0 | 6 | 10 | 4 | 3 | 2 | 1 | 1 | 4 | 7 | 7 | 5 | 1 |
| 8. ENGLAND, S.W. | Pembroke - | 30·181 | 44·7 | 42·1 | 47·2 | 44·7 | 34 | 11th | 52 | 21st, 22nd | ·266 | 90 | 7·5 | 1·80 | 0·45 | 27th | 18 | 0 | 1 | 0 | 3 | 17 | 6 | 2 | 4 | 1 | 0 | 5 | 5 | 5 | 8 | 1 |
| | Portishead - | 30·166 | 41·3 | 36·3 | 47·4 | 41·9 | 27 | 30th, 31st | 54 | 20th, 21st 22nd. | ·236 | 92 | 7·1 | 1·46 | 0·46 | 27th | 15 | 1 | 1 | 0 | 3 | 15 | 8 | 5 | 1 | 0 | 0 | 2 | 8 | 6 | 8 | 1 |
| | Plymouth - | 30·220 | 42·0 | 38·9 | 48·6 | 43·8 | 27 | 12th | 57 | 16th | ·245 | 92 | 7·8 | 2·15 | 0·55 | 27th | 18 | 1 | 3 | 0 | 6 | 22 | 1 | 2 | 4 | 0 | 0 | 0 | 9 | 1 | 9 | 6 |
| 9. IRELAND, N. | Greencastle - | 30·041 | 40·0 | 36·1 | 46·0 | 41·1 | 27 | 26th | 54 | 20th | ·217 | 88 | 8·0 | 6·17 | 1·00 | 21st | 25 | 1 | 0 | 0 | 5 | 23 | 0 | 3 | 2 | 0 | 1 | 3 | 6 | 8 | 8 | 0 |
| | Donaghadee - | 30·079 | 39·7 | 36·6 | 44·8 | 40·7 | 29 | 11th, 25th, 26th. | 54 | 20th | ·231 | 95 | 5·2 | 3·26 | 0·62 | 21st | 23 | 0 | 0 | 0 | 9 | 9 | 4 | 1 | 2 | 0 | 1 | 3 | 5 | 16 | 3 | 0 |
| 10. IRELAND, S. | Kingstown - | 30·136 | 43·3 | 39·6 | 47·3 | 43·5 | 31 | 26th | 58 | 21st | ·235 | 84 | 6·9 | 1·97 | 0·92 | 3rd | 19 | 2 | 0 | 0 | 3 | 9 | 5 | 2 | 0 | 0 | 2 | 6 | 0 | 12 | 7 | 2 |
| | Valencia - | 30·192 | 46·5 | 42·2 | 50·6 | 46·4 | 30 | 10th | 56 | 20th, 21st 30th. | ·270 | 87 | 8·6 | 5·86 | 0·75 | 3rd | 23 | 0 | 4 | 0 | 1 | 22 | 6 | 0 | 3 | 2 | 2 | 4 | 5 | 5 | 6 | 4 |
| | Roche's Point - | 30·194 | 44·3 | 41·1 | 48·5 | 44·8 | 30 | 10th | 54 | 16th, 21st | ·253 | 87 | 7·5 | 3·74 | 0·46 | 3rd | 18 | 1 | 0 | 0 | 4 | 18 | 6 | 4 | 3 | 0 | 2 | 3 | 6 | 7 | 6 | 0 |
| CHANNEL ISLANDS | Scilly - - | 30·252 | 47·9 | 45·3 | 49·7 | 47·5 | 36 | 26th | 54 | 21st | ·291 | 88 | 9·3 | 2·29 | 0·45 | 27th | 17 | 0 | 2 | 0 | 0 | 25 | 5 | 4 | 4 | 2 | 1 | 4 | 5 | 5 | 6 | 0 |
| | Jersey - - | 30·208 | 43·8 | 40·8 | 47·3 | 44·1 | 33 | 12th, 26th | 53 | 4th, 21st | ·250 | 88 | 6·8 | 2·69 | 0·91 | 24th | 17 | 1 | 6 | 0 | 5 | 14 | 6 | 2 | 5 | 1 | 0 | 4 | 7 | 7 | 4 | 1 |

# MONTHLY WIND CHART, FOR JANUARY, 1878.

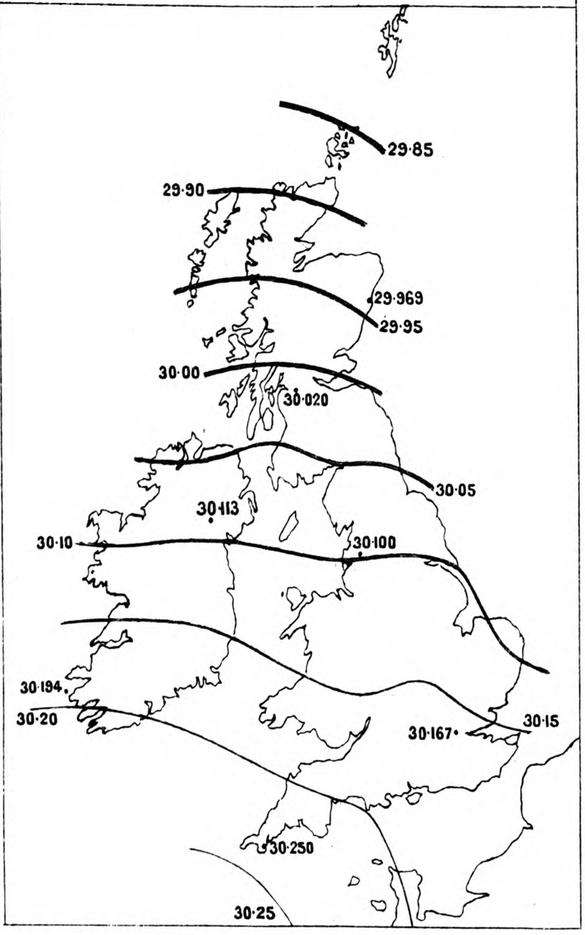

12
8
4
0
4
60
60
56
56
52
52
8
4
0

*To face p. 26.*

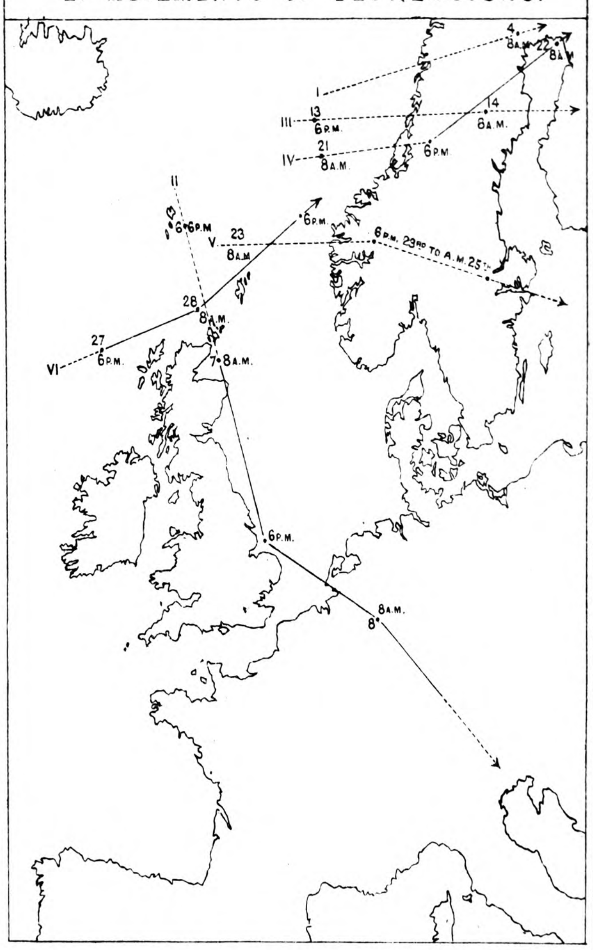
DANGERFIELD, LITH. 22, BEDFORD ST. COVENT GARDEN. 12406

# MONTHLY WEATHER CHART, JANUARY, 1878.

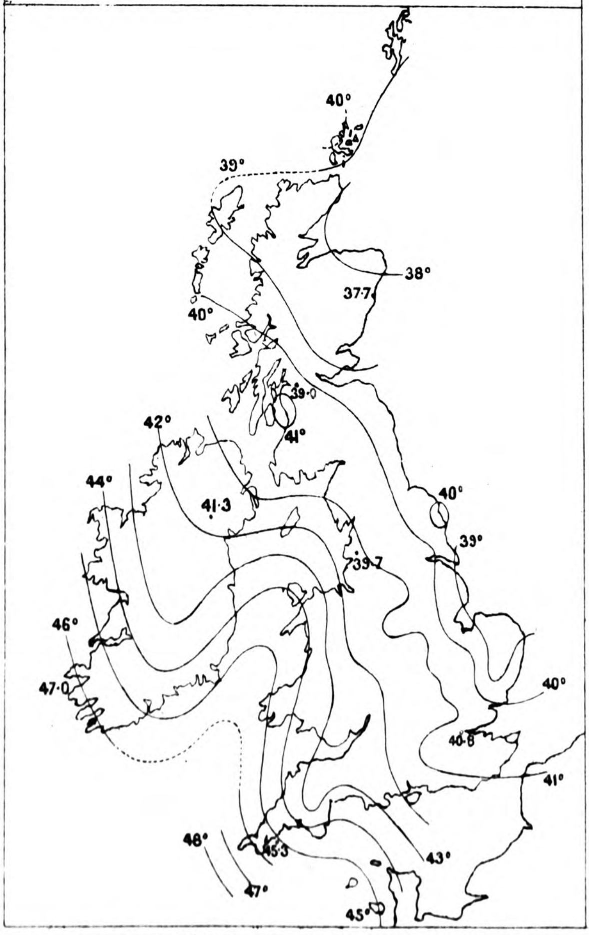
## 1. DISTRIBUTION OF MEAN PRESSURE


29·85
29·90
29·969
29·95
30·00
30·020
30·05
30·113
30·10
30·100
30·184
30·20
30·167
30·15
30·250
30·25

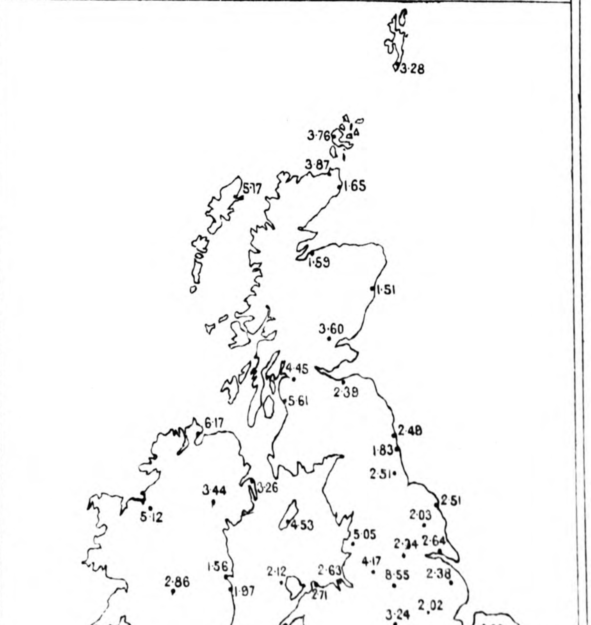
## 2. MOVEMENTS OF DEPRESSIONS.


4
8 A.M.
22
8 A.M.
I
13
III
6 P.M.
14
8 A.M.
21
IV
8 A.M.
6 P.M.
II
6
6 P.M.
23
V
8 A.M.
6 P.M.
6 P.M. 23RD TO A.M. 25TH
28
8 A.M.
27
6 P.M.
VI
7
8 A.M.
6 P.M.
8 A.M.
8

## 3. DISTRIBUTION OF MEAN TEMPERATURE


40°
39°
38°
37·7
40°
39·0
41°
42°
44°
41·3
40°
39°
39·7
46°
47·0
40°
40·8
41°
48°
45·3
43°
47°
45°

## 4. RAINFALL


3·28
3·76
3·87
1·65
5·17
1·59
1·51
3·60
4·45
2·39
5·61
6·17
2·48
1·83
2·51
3·44
3·26
2·51
5·12
4·53
2·03
5·05
2·34
2·64
4·17
8·55
2·38
1·56
2·12
2·63
2·86
1·87
2·71
2·02
3·24
2·06
2·15
1·72
1·57
1·41
1·39
1·79
5·62
3·65
1·48
1·47
1·70
1·43
3·74
1·07
1·80
1·90
1·19
1·90
1·46
1·12
1·47
1·84
1·80
1·41
1·36
5·75
1·85
2·15
3·68
2·29
2·86
2·68

*To follow Wind Chart for January.*

DANGERFIELD, LITH. 22, BEDFORD ST COVENT GARDEN. 12406.

## REMARKS FOR FEBRUARY 1878.

(*Tables A. to C., February, with Monthly Wind and Weather Charts.*)

*Wind.*—The variable anticyclonic airs with which the month began soon developed into a light Northerly breeze which continued to blow till the close of the 3rd. It then backed to West at the northern stations, while calms or Easterly breezes were again experienced over central England and on the Channel coasts; these conditions continued with very little change for several days during which the centre of an anticyclone lay over or near to southern England. A light Southerly current was experienced for a short time on the 9th in the south-west, and was followed by another spell of calms lasting till the close of the 11th, when a Southerly breeze again appeared in the west, and light Easterly airs elsewhere. On the 12th the wind increased in force and blew generally from between South and South-east, backing a little later to East in places. On the 13th and 14th it circulated around a centre of low pressure lying over St. George's Channel, and was therefore Northerly in the west of Ireland, Westerly in the Channel, Southerly in the east of England, and Easterly in Scotland; but on the 15th it again became generally Southerly, and for several days it blew from between South and West, and at times with considerable strength. At the close of the 20th the direction had become generally Westerly, being influenced by an area of high pressure which lay to the southward of England, and for several days very little change took place, the force being light over the southern portion of the kingdom and moderate in the north. On the 26th the wind began to back again and, becoming somewhat stronger, it blew from between South and West till the close of the month.

Upon the whole, therefore, the South-westerly and Westerly winds largely predominated over Scotland and the northern half of England, while in the south-west the Easterly winds were experienced as frequently, and in places more so, as those from the opposite quadrant.

*Pressure.*—The mean pressure was again much above the average for the month, the values ranging from 30·3 inches in the south-east of England to 29·95 inches in the Shetlands. The highest readings were recorded at all the more northern stations on the 1st, but not until the 21st in the south of England and Ireland; on both occasions the centre of an anticyclone lay near our western coasts. The minima occurred everywhere in connection with the depression which skirted our north-western coasts on the 27th and 28th, but the lowest point the barometer reached was only 29·4 inches at Aberdeen. The range of pressure, consequently, was by no means large, and only amounted to 1·227 inches at Armagh where it was greatest.

*Movements of the Depressions.*—Systems of high-pressure lay over England, or at no great distance to the southward, during the greater part of the month, and only a few depressions were observed, none of which were very deep. Those which chiefly affected the British Isles were a very shallow one which lay for a day or two over St. George's Channel, and then became filled up, and two or three others which travelled northward at some distance to the westward of our coasts. The remainder were observed over the northern portion of Scandinavia, too far off to materially influence our weather, and travelling in every case to the eastward.

*Temperature.*—The mean temperature was everywhere a little above the average, and ranged from 48° in the south-west of the kingdom to 41° in the east of England, and to 42° in the Shetlands. The maxima rose to above 60° at several stations, while the minima nowhere fell so low as 20°, and in some districts not below 30°. The maxima occurred very generally about the 17th, and the minima during the first two days of the month at the western stations, and about the 8th or 9th elsewhere. The extreme range of temperature was recorded in the south-east of England at Audley End, where it amounted to 38°, but, as a rule, the difference between the highest and lowest readings did not greatly exceed 30°.

*Vapour Tension.*—The mean values were again greatest in the south-west, and least in the north-east, varying from 0·3 inch at Scilly to 0·2 inch in the east of Scotland. *Relative Humidity* was fairly equable in its distribution over the greater portion of the kingdom, but on the east coast of Scotland the mean values were rather lower than elsewhere.

*Rainfall.*—The rainfall was uniformly below the average for the month, at Nairn it amounted to less than half an inch, and at Aberdeen to only 0·7 inch; at only a few stations did the monthly fall exceed 2 inches. Very heavy daily falls were rare, and excepting at Dartmoor they nowhere amounted to an inch in 24 hours; the heaviest falls were recorded on the 12th and 28th.

TABLE A., FEBRUARY.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of FEBRUARY 1878; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE in the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation=100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia - - | 30·158 | 29·486 | 27th, 9 a.m. | 30·694 | 21st, 8 p.m. | 1·208 | 47·8 | 33·4 | 2nd, 6 a.m. | 55·2 | 28th, 2 p.m. | 21·8 | ·286 | 86 | 3·394 |
| Armagh - - | ·169 | ·466 | 27th, 4 p.m. | ·693 | 1st, 1 a.m. | 1·227 | 43·4 | 30·9 | 1st, 7 a.m. | 55·0 | 27th, 2 p.m. | 24·1 | ·249 | 88 | 1·640 |
| Glasgow - - | ·125 | ·421 | 28th, 3 p.m. | ·607 | 1st, 1 a.m. | 1·186 | 42·2 | 27·9 | 3rd, 6 a.m. | 52·1 | 17th, 7 p.m.<br>27th, 2 p.m. | 24·2 | ·235 | 88 | 2·010 |
| Aberdeen - - | ·089 | ·399 | 28th, 4 p.m. | ·549 | 1st, 1 a.m. | 1·150 | 42·3 | 32·9 | 19th, 7 a.m. | 55·9 | 22nd, 3 p.m. | 23·0 | ·222 | 83 | 0·695 |
| Falmouth - - | ·273 | ·658 | 27th, 3 p.m. | ·720 | 21st, 9 p.m. | 1·062 | 46·2 | 30·8 | 1st, 6 a.m. | 54·2 | 17th, Noon | 23·4 | ·272 | 88 | 2·680 |
| Stonyhurst - - | ·220 | ·586 | 27th, 6 p.m. | ·662 | 1st, 1 a.m.<br>3 a.m. | 1·076 | 40·7 | 26·0 | 1st, 6 a.m. | 56·6 | 17th, 3 p.m. | 30·6 | ·224 | 88 | 2·073 |
| Kew - - | 30·285 | 29·659 | 27th, 8 p.m. | 30·653 | 22nd, 1 a.m. | 0·994 | 42·5 | 25·9 | 8th, 9 a.m. | 57·5 | 17th, 2 p.m. | 31·6 | ·238 | 87 | 1·250 |

TABLE B., FEBRUARY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of Latitude,

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Means of | | | Absolute Extremes. | | | |
| | | | | | | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| 0. SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·987 | 42·9 | 42·1 | 42·5 | 39·3 | 46·3 | 42·8 | 31·0 | 26th | 51·5 | 17th |
| 1. SCOTLAND, E. | Glenalmond | 30·122 | 39·7 | 41·9 | 40·3 | 35·6 | 46·6 | 41·1 | 28·1 | 11th | 54·5 | 22nd |
| 2. ENGLAND, N.E. | Seaham | 30·165 | 42·2 | 42·6 | 42·4 | 37·2 | 48·2 | 42·7 | 29·3 | 1st | 57·0 | 17th |
| | Durham* | 30·169 | 42·4 | 40·5 | 41·5 | 35·2 | 47·3 | 41·3 | 26·8 | 9th | 57·4 | 17th |
| | Hull | 30·232 | 40·3 | 41·2 | 40·8 | 36·1 | 46·9 | 41·5 | 27·5 | 1st | 57·5 | 23rd |
| | Kelstern 𝔐 | 30·243 | 38·2 | 39·6 | 38·9 | 35·3 | 45·8 | 40·6 | 27·1 | 1st | 56·1 | 17th |
| 3. ENGLAND, E. | Hillington 𝔐 | 30·241 | 39·7 | 40·9 | 40·3 | 35·8 | 46·7 | 41·3 | 24·9 | 8th | 60·2 | 17th |
| | Audley End 𝔐 | 30·250 | 39·8 | 41·0 | 40·4 | 36·0 | 46·8 | 41·4 | 21·8 | 8th | 60·0 | 17th |
| | Chigwell Row | 30·312 | 40·6 | 42·2 | 41·4 | 37·6 | 46·3 | 42·0 | 24·2 | 8th | 58·0 | 18th |
| 4. MIDLAND COUNTIES. | Wakefield 𝔐 | 30·226 | 40·6 | 42·6 | 41·6 | 37·8 | 47·9 | 42·9 | 26·4 | 9th | 62·8 | 17th |
| | Buxton 𝔐 | 30·253 | 38·3 | 38·7 | 38·5 | 35·0 | 43·1 | 39·1 | 23·6 | 9th | 55·0 | 17th |
| | Cheadle 𝔐 | 30·257 | 38·7 | 40·2 | 39·5 | 36·1 | — | — | 26·7 | 9th | — | — |
| | Leicester | 30·256 | 40·0 | 41·9 | 41·0 | 37·4 | 47·0 | 42·2 | 25·5 | 1st | 59·2 | 17th |
| | Uppingham | 30·257 | 39·1 | 40·2 | 39·7 | 35·7 | 45·8 | 40·8 | 26·1 | 9th | 58·5 | 17th |
| | Oscott | 30·254 | 39·4 | 40·8 | 40·1 | 36·7 | 46·2 | 41·5 | 26·5 | 1st | 60·1 | 17th |
| | Churchstoke 𝔐 | 30·274 | 40·3 | 41·2 | 40·8 | 36·3 | 46·4 | 41·4 | 23·5 | 1st | 60·7 | 17th |
| | Hereford 𝔐 | 30·257 | 40·4 | 42·2 | 41·3 | 37·2 | 47·9 | 42·6 | 24·2 | 1st | 57·6 | 26th |
| 5. ENGLAND, S. | Marlborough 𝔐 | 30·294 | 39·7 | 41·0 | 40·4 | 37·4 | 46·8 | 42·1 | 24·8 | 8th | 57·7 | 17th |
| | Strathfield Turgiss 𝔐 | 30·310 | 41·5 | 41·6 | 41·6 | 36·7 | 47·4 | 42·1 | 23·0 | 8th | 60·6 | 17th |
| | Ramsgate 𝔐 | 30·292 | 41·4 | 41·8 | 41·6 | 38·4 | 46·2 | 42·3 | 25·9 | 8th | 55·3 | 17th |
| | Folkestone | 30·303 | 41·8 | 41·7 | 41·8 | 38·3 | 45·9 | 42·1 | 28·1 | 8th | 56·2 | 18th |
| | Southampton† | 30·289 | 42·4 | 43·0 | 42·7 | 38·4 | 46·7 | 42·6 | 27·5 | 8th | 55·3 | 18th |
| | Hastings | 30·307 | 41·6 | 42·0 | 41·8 | 38·7 | 45·7 | 42·2 | 28·5 | 8th | 54·3 | 21st |
| 6. SCOTLAND, W. | —— | — | — | — | — | — | — | — | — | — | — | — |
| 7. ENGLAND, N.W. | Douglas | 30·174 | 42·1 | 42·9 | 42·5 | 38·0 | 46·7 | 42·4 | 28·0 | 1st | 52·4 | 20th |
| | Prestwich | 30·220 | 39·0 | 41·1 | 40·1 | 36·4 | 46·0 | 41·2 | 26·0 | 1st | 58·3 | 17th |
| | Llandudno 𝔐 | 30·208 | 43·8 | 43·6 | 43·7 | 39·8 | 49·1 | 44·5 | 29·3 | 1st | 63·4 | 17th |
| 8. ENGLAND, S.W. | Caermarthen 𝔐 | 30·242 | 43·1 | 42·7 | 42·9 | 38·8 | 48·6 | 43·7 | 23·8 | 1st | 59·7 | 17th |
| | Dartmoor 𝔐 | 30·269 | 39·4 | 40·0 | 39·7 | 36·1 | 43·1 | 39·6 | 23·5 | 1st | 54·0 | 17th |
| | Babbacombe 𝔐 | 30·285 | 43·8 | 43·8 | 43·8 | 40·4 | 48·3 | 44·4 | 32·2 | 1st | 57·5 | 17th |
| 9. IRELAND, N. | Markree Castle | 30·137 | 42·8 | 43·0 | 42·9 | 38·7 | 48·2 | 43·5 | 23·3 | 1st | 56·8 | 28th |
| 10. IRELAND, S. | Dublin | 30·194 | 43·8 | 44·3 | 44·1 | 40·7 | 48·5 | 44·6 | 27·6 | 1st | 59·4 | 17th |
| | Parsonstown | 30·185 | 42·8 | 42·9 | 42·9 | 38·9 | 48·7 | 43·8 | 24·7 | 1st | 57·2 | 16th |
| CHANNEL | Jersey (St. Aubin's) | 30·338 | 44·2 | 43·9 | 44·1 | 40·2 | 47·4 | 43·8 | 29·8 | 9th | 55·3 | 15th |

NOTE.—The stations marked thus 𝔐 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

**STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of FEBRUARY 1878, corrected for Diurnal Range.**

**beginning in each case with the Station lying furthest North.)**

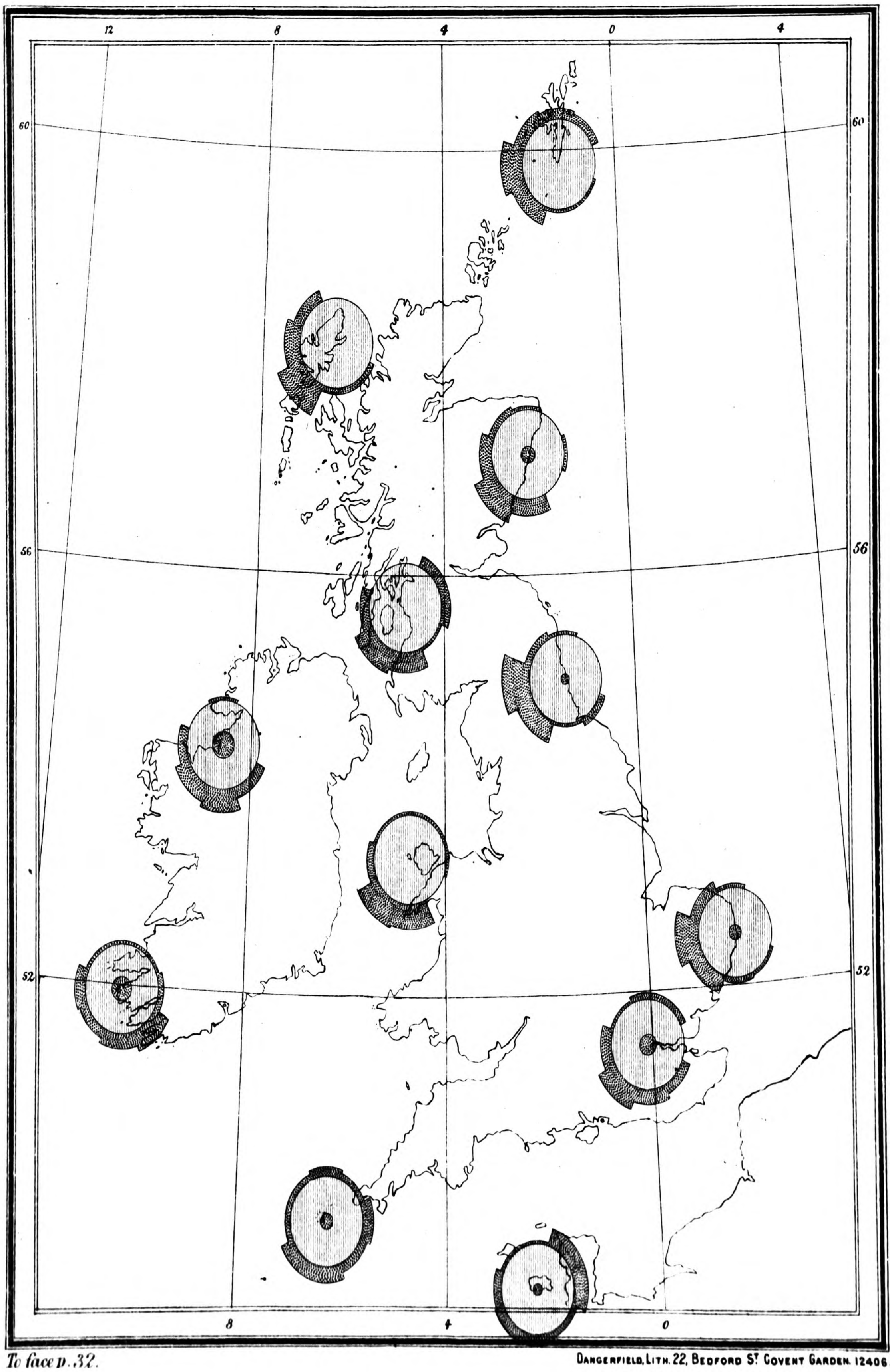
| TENSION OF VAPOUR. | | | RELATIVE HUMIDITY. | | | AMOUNT OF CLOUD (0 to 10). | | | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·246 | ·234 | ·240 | 89 | 88 | 89 | 7·4 | 6·5 | 7·0 | 1·980 | ·330 | 27th | 20 | 3 | 0 | 0 | 2 | 13 | 3 | 0 | 1 | 1 | 3 | 7 | 13 | 17 | 11 | 3 |
| ·217 | ·222 | ·220 | 88 | 86 | 87 | 7·4 | 6·9 | 7·2 | 2·025 | ·440 | 14th | 12 | 0 | 0 | 0 | 1 | 13 | 0 | 1 | 0 | 0 | 8 | 4 | 14 | 21 | 3 | 5 |
| ·235 | ·238 | ·237 | 88 | 87 | 88 | 6·3 | 5·7 | 6·0 | 1·022 | ·278 | 14th | 9 | 1 | 0 | 0 | 4 | 11 | 0 | 2 | 1 | 0 | 4 | 8 | 13 | 22 | 4 | 2 |
| ·234 | ·225 | ·230 | 86 | 88 | 87 | 7·0 | 5·9 | 6·5 | 1·132 | ·627 | 14th | 9 | 1 | 0 | 0 | 3 | 12 | 0 | 0 | 2 | 1 | 2 | 14 | 19 | 8 | 8 | 2 |
| ·227 | ·237 | ·232 | 92 | 93 | 93 | 7·4 | 4·9 | 6·2 | 1·170 | ·300 | 12th, 14th | 13 | 0 | 0 | 0 | 4 | 10 | 0 | 2 | 1 | 2 | 2 | 2 | 33 | 7 | 3 | 4 |
| ·223 | ·236 | ·230 | 95 | 96 | 96 | 7·1 | 5·7 | 6·4 | 1·689 | ·358 | 28th | 16 | 0 | 0 | 0 | 4 | 12 | 0 | 2 | 0 | 1 | 2 | 11 | 15 | 10 | 12 | 5 |
| ·233 | ·243 | ·238 | 94 | 93 | 94 | 7·9 | 7·9 | 7·9 | 1·373 | ·330 | 27th | 14 | 0 | 0 | 0 | 0 | 17 | 0 | 5 | 2 | 1 | 4 | 2 | 25 | 11 | 4 | 2 |
| ·232 | ·241 | ·237 | 93 | 92 | 92 | 7·3 | 7·0 | 7·2 | 1·140 | ·280 | 13th | 13 | 0 | 0 | 0 | 3 | 16 | 0 | 0 | 0 | 0 | 5 | 1 | 14 | 2 | 11 | 23 |
| ·232 | ·243 | ·238 | 92 | 90 | 91 | 9·1 | 8·5 | 8·8 | 1·580 | ·470 | 12th | 11 | 0 | 1 | 0 | 0 | 20 | 0 | 7 | 2 | 5 | 1 | 14 | 14 | 6 | 2 | 5 |
| ·227 | ·237 | ·232 | 89 | 86 | 88 | 7·0 | 6·8 | 6·9 | 0·870 | ·340 | 14th | 10 | 1 | 0 | 0 | 3 | 13 | 0 | 1 | 1 | 1 | 1 | 4 | 14 | 13 | 0 | 21 |
| ·209 | ·215 | ·212 | 89 | 89 | 89 | 8·4 | 7·2 | 7·8 | 2·455 | ·500 | 28th | 15 | 1 | 0 | 0 | 1 | 16 | 0 | 4 | 1 | 1 | 5 | 0 | 7 | 23 | 11 | 4 |
| ·213 | ·228 | ·220 | 91 | 92 | 91 | 8·2 | 6·7 | 7·5 | 1·810 | ·430 | 12th | 12 | 1 | 0 | 0 | 2 | 17 | 2 | 4 | 4 | 4 | 5 | 14 | 12 | 5 | 7 | 1 |
| ·224 | ·235 | ·230 | 91 | 89 | 90 | 8·5 | 5·6 | 7·1 | 1·240 | ·340 | 12th | 13 | 0 | 1 | 0 | 4 | 16 | 0 | 1 | 5 | 1 | 1 | 9 | 17 | 7 | 2 | 13 |
| ·225 | ·234 | ·230 | 92 | 92 | 92 | 8·9 | 7·0 | 8·0 | 1·288 | ·243 | 13th | 12 | 1 | 0 | 0 | 2 | 17 | 0 | 3 | 1 | 1 | 2 | 4 | 15 | 15 | 6 | 9 |
| ·229 | ·236 | ·253 | 93 | 91 | 92 | 8·9 | 7·6 | 8·3 | 1·080 | ·370 | 12th | 11 | 0 | 1 | 0 | 2 | 20 | 0 | 4 | 3 | 2 | 3 | 15 | 12 | 8 | 4 | 5 |
| ·229 | ·226 | ·228 | 90 | 86 | 88 | 7·4 | 6·9 | 7·2 | 1·063 | ·273 | 12th | 17 | 2 | 1 | 0 | 1 | 9 | 0 | 1 | 1 | 3 | 6 | 3 | 12 | 5 | 5 | 20 |
| ·238 | ·240 | ·239 | 93 | 88 | 91 | 8·7 | 7·7 | 8·2 | 1·155 | ·420 | 12th | 16 | 0 | 0 | 0 | 2 | 20 | 0 | 0 | 0 | 1 | 1 | 6 | 4 | 5 | 3 | 36 |
| ·237 | ·246 | ·242 | 95 | 94 | 95 | 8·6 | 8·3 | 8·5 | 1·847 | ·402 | 27th | 14 | 0 | 0 | 0 | 2 | 21 | 0 | 2 | 1 | 2 | 1 | 4 | 12 | 5 | 0 | 29 |
| ·233 | ·245 | ·239 | 87 | 92 | 89 | 8·1 | 8·0 | 8·1 | 1·625 | ·536 | 13th | 12 | 0 | 0 | 1 | 2 | 18 | 0 | 3 | 1 | 0 | 11 | 11 | 3 | 10 | 2 | 15 |
| ·244 | ·250 | ·247 | 93 | 93 | 93 | 8·4 | 6·8 | 7·6 | 1·195 | ·332 | 27th | 18 | 0 | 0 | 0 | 1 | 16 | 0 | 4 | 4 | 5 | 2 | 5 | 18 | 4 | 6 | 8 |
| ·246 | ·253 | ·250 | 93 | 96 | 95 | 8·4 | 7·9 | 8·2 | 1·370 | ·380 | 27th | 16 | 1 | 0 | 0 | 1 | 17 | 0 | 7 | 3 | 9 | 1 | 12 | 9 | 9 | 2 | 4 |
| ·247 | ·255 | ·251 | 90 | 89 | 89 | 8·8 | 8·3 | 8·6 | 2·731 | ·725 | 13th | 16 | 0 | 0 | 0 | 2 | 22 | 0 | 5 | 6 | 7 | 10 | 2 | 15 | 2 | 3 | 6 |
| ·247 | ·256 | ·252 | 93 | 94 | 93 | 8·1 | 8·6 | 8·4 | 2·055 | ·490 | 27th | 16 | 0 | 0 | 0 | 0 | 19 | 1 | 7 | 9 | 6 | 2 | 9 | 9 | 8 | 1 | 5 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·250 | ·257 | ·254 | 93 | 92 | 92 | 8·4 | 7·0 | 7·7 | 3·512 | ·732 | 28th | 13 | 1 | 0 | 0 | 0 | 15 | 1 | 3 | 1 | 2 | 5 | 9 | 8 | 15 | 5 | 8 |
| ·221 | ·236 | ·229 | 93 | 91 | 92 | 7·8 | 7·3 | 7·6 | 1·220 | ·470 | 13th | 11 | 1 | 1 | 0 | 1 | 17 | 0 | 1 | 3 | 0 | 4 | 13 | 7 | 8 | 0 | 20 |
| ·241 | ·244 | ·243 | 85 | 86 | 85 | 7·5 | 7·3 | 7·4 | 1·130 | ·400 | 28th | 11 | 0 | 0 | 0 | 1 | 15 | 0 | 4 | 2 | 5 | 2 | 13 | 11 | 18 | 1 | 0 |
| ·262 | ·260 | ·261 | 93 | 94 | 93 | 8·4 | 9·0 | 8·7 | 2·920 | ·690 | 28th | 17 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 12 | 3 | 5 | 11 | 3 | 0 | 22 |
| ·237 | ·242 | ·240 | 97 | 97 | 97 | 8·2 | 8·7 | 8·5 | 5·490 | 1·460 | 28th | 17 | 0 | 0 | 0 | 2 | 21 | 0 | 2 | 4 | 4 | 5 | 7 | 8 | 7 | 3 | 16 |
| ·263 | ·261 | ·262 | 91 | 91 | 91 | 8·4 | 7·3 | 7·9 | 2·320 | ·720 | 12th | 12 | 0 | 0 | 0 | 2 | 18 | 0 | 5 | 4 | 8 | 1 | 5 | 9 | 12 | 3 | 9 |
| ·252 | ·253 | ·253 | 90 | 91 | 91 | 7·8 | 7·9 | 7·9 | 1·443 | ·216 | 25th | 21 | 0 | 0 | 0 | 1 | 15 | 0 | 1 | 1 | 1 | 8 | 14 | 9 | 4 | 0 | 18 |
| ·251 | ·255 | ·253 | 87 | 88 | 87 | 8·0 | 7·8 | 7·9 | 1·576 | ·826 | 12th | 14 | 1 | 2 | 0 | 2 | 19 | 0 | 0 | 0 | 2 | 7 | 6 | 8 | 24 | 3 | 6 |
| ·260 | ·256 | ·258 | 93 | 92 | 92 | 8·7 | 8·2 | 8·5 | 1·645 | ·593 | 12th | 19 | 0 | 0 | 0 | 2 | 22 | 0 | 0 | 0 | 0 | 11 | 7 | 17 | 6 | 2 | 13 |
| ·268 | ·263 | ·266 | 91 | 90 | 90 | 9·0 | 7·2 | 8·1 | 1·998 | ·980 | 13th | 19 | 0 | 0 | 0 | 1 | 17 | 0 | 1 | 10 | 9 | 1 | 10 | 10 | 5 | 0 | 10 |

TABLE C., FEBRUARY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of FEBRUARY 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. | | | | | | | | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | At 8 a.m. | Means of | | | Absolute Extremes. | | | | | | | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | | | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. | | | | | | | | | | | | | | | | | | | | | | |
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| 0. SCOTLAND, N. | Sumburgh Head | 29·957 | 42·2 | 37·0 | 45·6 | 41·3 | 28 | 12th, 26th | 48 | 4th, 5th, 16th, 17th, 20th, 21st, 22nd, 28th. | 0·233 | 87 | 7·0 | 1·54 | 0·30 | 24th | 19 | 0 | 0 | 0 | 2 | 9 | 5 | 3 | 2 | 0 | 1 | 1 | 6 | 10 | 5 | 0 |
| | Thurso | 29·999 | 41·4 | 36·8 | 49·1 | 43·0 | 26 | 1st | 58 | 22nd | ·242 | 93 | 7·5 | 2·49 | 0·43 | 6th | 20 | 2 | 0 | 0 | 2 | 13 | 0 | 0 | 0 | 2 | 1 | 10 | 7 | 5 | 1 | 2 |
| | Wick | 30·016 | 41·3 | 36·5 | 47·4 | 42·0 | 26 | 13th, 14th | 59 | 22nd | ·232 | 90 | 5·7 | 1·45 | 0·34 | 25th | 17 | 1 | 0 | 0 | 10 | 12 | 0 | 1 | 0 | 3 | 1 | 6 | 7 | 6 | 3 | 1 |
| | Stornoway | 29·999 | 42·6 | 38·4 | 46·9 | 42·7 | 30 | 13th, 14th | 51 | 16th, 17th 21st, 22nd. | ·249 | 91 | 8·6 | 2·35 | 0·45 | 28th | 23 | 2 | 1 | 2 | 3 | 22 | 4 | 0 | 0 | 0 | 2 | 2 | 13 | 7 | 4 | 0 |
| 1. SCOTLAND, E. | Nairn | 30·058 | 40·8 | 37·2 | 47·6 | 42·4 | 26 | 13th | 59 | 20th | ·213 | 84 | 4·9 | 0·41 | 0·07 | 25th | 9 | 0 | 0 | 0 | 7 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | 1 | 12 |
| | Aberdeen | 30·075 | 40·0 | 36·6 | 48·2 | 42·4 | 27 | 1st | 59 | 22nd | ·211 | 86 | 4·8 | 0·75 | 0·25 | 14th | 11 | 1 | 0 | 0 | 12 | 8 | 2 | 1 | 0 | 1 | 0 | 6 | 11 | 5 | 2 | 2 |
| | Leith | 30·120 | 41·5 | 37·0 | 48·3 | 42·7 | 28 | 1st | 55 | 17th, 20th | ·234 | 90 | 6·5 | 0·64 | 0·16 | 26th | 8 | 1 | 0 | 0 | 3 | 10 | 1 | 0 | 0 | 2 | 0 | 1 | 12 | 11 | 1 | 1 |
| 2. ENGLAND, N.E. | Shields | 30·187 | 41·1 | 37·3 | 47·4 | 42·4 | 31 | 1st | 56 | 17th | ·220 | 85 | 8·0 | 0·76 | 0·29 | 14th | 7 | 0 | 0 | 0 | 2 | 18 | 5 | 1 | 0 | 0 | 2 | 1 | 8 | 13 | 2 | 1 |
| | Scarborough | 30·212 | 40·5 | 37·8 | 46·5 | 42·2 | 31 | 7th, 9th, 10th. | 56 | 17th | ·228 | 91 | 7·9 | 0·82 | 0·33 | 14th | 10 | 1 | 0 | 0 | 4 | 17 | 0 | 2 | 0 | 1 | 1 | 3 | 9 | 10 | 2 | 0 |
| | York | 30·233 | 39·0 | 35·2 | 47·9 | 41·6 | 24 | 9th | 59 | 17th | ·220 | 93 | 7·3 | 0·94 | 0·44 | 14th | 11 | 1 | 0 | 0 | 5 | 17 | 0 | 2 | 0 | 1 | 1 | 8 | 7 | 8 | 1 | 0 |
| 3. ENGLAND, E. | Yarmouth | 30·266 | 39·6 | 36·2 | 45·2 | 40·7 | 28 | 9th, 10th 11th. | 54 | 28th | ·232 | 95 | 5·8 | 1·10 | 0·22 | 12th, 27th | 14 | 0 | 0 | 0 | 9 | 7 | 1 | 1 | 0 | 0 | 1 | 2 | 7 | 11 | 4 | 2 |
| | Cambridge | 30·277 | 38·8 | 35·1 | 48·4 | 41·8 | 26 | 2nd, 8th, 9th. | 59 | 17th | ·224 | 96 | 7·5 | 1·15 | 0·27 | 12th | 13 | 0 | 0 | 0 | 5 | 19 | 0 | 1 | 2 | 0 | 3 | 4 | 12 | 3 | 2 | 1 |
| 4. MIDLAND COUNTIES. | Nottingham | 30·275 | 39·1 | 35·2 | 48·1 | 41·7 | 24 | 1st | 60 | 17th | ·217 | 91 | 8·1 | 1·18 | 0·30 | 12th | 12 | 1 | 0 | 0 | 5 | 20 | 0 | 3 | 2 | 0 | 1 | 7 | 6 | 2 | 1 | 6 |
| | Oxford | 30·278 | 39·9 | 37·4 | 46·9 | 42·2 | 25 | 8th, 9th | 59 | 17th | ·229 | 94 | 8·6 | 1·28 | 0·34 | 13th | 13 | 0 | 0 | 0 | 1 | 18 | 0 | 2 | 1 | 1 | 1 | 4 | 4 | 4 | 1 | 10 |
| 5. ENGLAND, S. | London | 30·295 | 40·5 | 37·3 | 47·6 | 42·5 | 25 | 8th | 61 | 17th | ·231 | 92 | 9·3 | 1·23 | 0·36 | 13th | 14 | 0 | 0 | 0 | 1 | 23 | 0 | 2 | 2 | 0 | 3 | 5 | 8 | 4 | 1 | 3 |
| | Dover | 30·310 | 41·5 | 39·0 | 45·2 | 42·1 | 30 | 8th, 9th | 53 | 18th, 25th, 26th. | ·238 | 91 | 7·3 | 1·86 | 0·64 | 27th | 15 | 0 | 0 | 0 | 3 | 13 | 0 | 3 | 2 | 2 | 2 | 2 | 8 | 3 | 4 | 2 |
| | Hurst Castle | 30·286 | 43·0 | 37·4 | 47·4 | 42·4 | 27 | 1st, 8th | 54 | 17th | ·255 | 92 | 7·0 | 2·04 | 0·56 | 13th | 16 | 0 | 0 | 0 | 5 | 13 | 1 | 2 | 4 | 5 | 3 | 5 | 6 | 2 | 1 | 0 |
| 6. SCOTLAND, W. | Ardrossan | 30·130 | 43·1 | 40·9 | 47·4 | 44·2 | 31 | 3rd, 4th | 52 | 21st, 28th | ·244 | 87 | 9·1 | 2·56 | 0·75 | 28th | 16 | 1 | 0 | 0 | 1 | 22 | 2 | 0 | 3 | 3 | 1 | 8 | 9 | 4 | 0 | 0 |
| 7. ENGLAND, N.W. | Liverpool | 30·228 | 40·5 | 38·1 | 46·7 | 42·4 | 28 | 9th | 62 | 17th | ·220 | 88 | 7·9 | 1·00 | 0·44 | 28th | 14 | 0 | 0 | 0 | 2 | 17 | 0 | 0 | 1 | 2 | 11 | 4 | 3 | 6 | 1 | 0 |
| | Holyhead | 30·197 | 43·0 | 40·8 | 47·8 | 44·3 | 34 | 1st | 58 | 17th | ·262 | 94 | 8·4 | 2·29 | 0·57 | 12th | 15 | 0 | 0 | 0 | 2 | 19 | 0 | 1 | 1 | 1 | 0 | 10 | 11 | 3 | 1 | 0 |
| 8. ENGLAND, S.W. | Pembroke | 30·229 | 44·5 | 41·8 | 47·4 | 44·6 | 31 | 1st | 51 | 17th, 21st 28th. | ·282 | 96 | 8·4 | 2·37 | 0·87 | 12th | 12 | 0 | 0 | 0 | 3 | 21 | 1 | 2 | 2 | 5 | 3 | 6 | 3 | 5 | 1 | 1 |
| | Portishead | 30·262 | 41·1 | 36·5 | 48·7 | 42·6 | 24 | 8th | 58 | 17th | ·238 | 93 | 8·3 | 1·79 | 0·61 | 28th | 11 | 1 | 0 | 0 | 1 | 17 | 3 | 2 | 3 | 3 | 2 | 5 | 8 | 2 | 0 | 3 |
| | Plymouth | 30·272 | 43·0 | 40·1 | 49·6 | 44·9 | 31 | 1st, 2nd, 8th, 9th. | 55 | 17th, 18th | ·257 | 93 | 8·1 | 1·81 | 0·42 | 28th | 11 | 1 | 0 | 0 | 4 | 21 | 2 | 1 | 2 | 5 | 2 | 2 | 4 | 1 | 1 | 10 |
| 9. IRELAND, N. | Greencastle | 30·104 | 42·7 | 38·1 | 48·9 | 43·5 | 29 | 1st | 56 | 28th | ·246 | 89 | 9·0 | 1·94 | 0·32 | 26th | 15 | 0 | 0 | 0 | 1 | 23 | 0 | 3 | 3 | 2 | 5 | 4 | 4 | 7 | 0 | 0 |
| | Donaghadee | 30·152 | 42·4 | 39·3 | 47·0 | 43·2 | 30 | 1st, 2nd | 54 | 16th | ·258 | 95 | 6·1 | 2·13 | 0·48 | 28th | 15 | 0 | 0 | 0 | 5 | 10 | 2 | 0 | 0 | 2 | 2 | 6 | 7 | 9 | 2 | 0 |
| 10. IRELAND, S. | Kingstown | 30·182 | 44·4 | 41·5 | 48·1 | 44·8 | 33 | 1st, 2nd | 57 | 28th | ·246 | 84 | 7·8 | 1·58 | 0·95 | 12th | 13 | 0 | 0 | 0 | 2 | 13 | 0 | 0 | 0 | 1 | 4 | 10 | 3 | 6 | 3 | 1 |
| | Valencia | 30·154 | 46·9 | 43·4 | 52·2 | 47·8 | 32 | 2nd | 56 | 28th | ·281 | 88 | 7·4 | 3·17 | 0·65 | 12th | 19 | 0 | 0 | 0 | 2 | 12 | 5 | 1 | 1 | 2 | 7 | 5 | 3 | 4 | 1 | 4 |
| | Roche's Point | 30·198 | 44·8 | 41·6 | 49·9 | 45·8 | 33 | 1st, 2nd | 55 | 28th | ·257 | 87 | 8·0 | 3·92 | 0·68 | 27th | 12 | 0 | 0 | 0 | 3 | 18 | 1 | 6 | 1 | 0 | 4 | 4 | 5 | 5 | 3 | 0 |
| CHANNEL ISLANDS | Scilly (St. Mary's) | 30·256 | 48·0 | 45·7 | 50·5 | 48·1 | 38 | 1st | 54 | 17th, 28th | ·297 | 90 | 9·4 | 1·34 | 0·40 | 12th | 19 | 0 | 0 | 0 | 0 | 23 | 2 | 3 | 2 | 4 | 3 | 5 | 5 | 2 | 2 | 2 |
| | Jersey (Noirmont) | 30·282 | 42·9 | 40·2 | 47·3 | 43·8 | 30 | 9th, 10th | 54 | 15th, 17th | ·265 | 96 | 7·8 | 1·98 | 0·92 | 13th | 14 | 0 | 0 | 0 | 3 | 13 | 2 | 1 | 6 | 6 | 2 | 4 | 4 | 3 | 1 | 1 |

# MONTHLY WIND CHART FOR FEBRUARY, 1878.

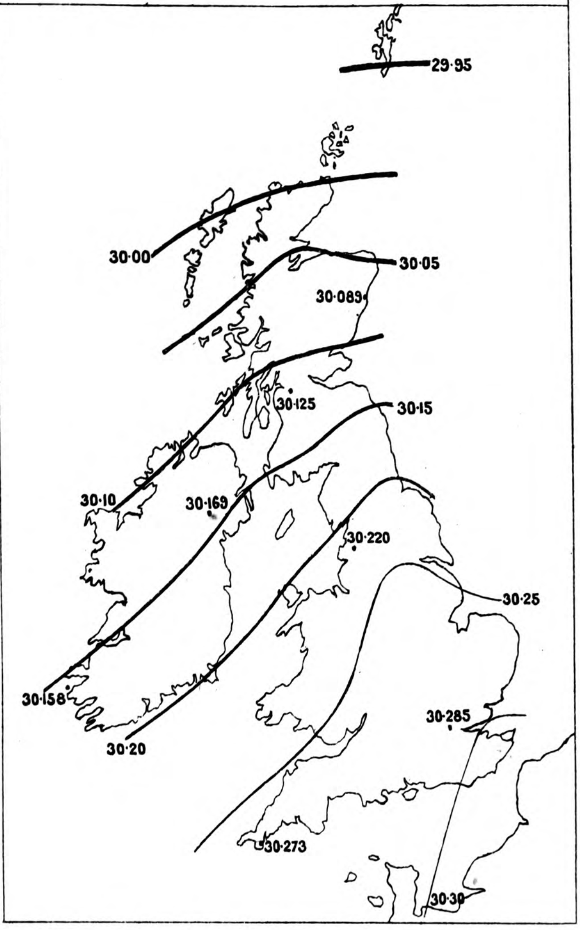

12
8
4
0
4
60
60
56
56
52
52
8
4
0

*To face p. 32.*

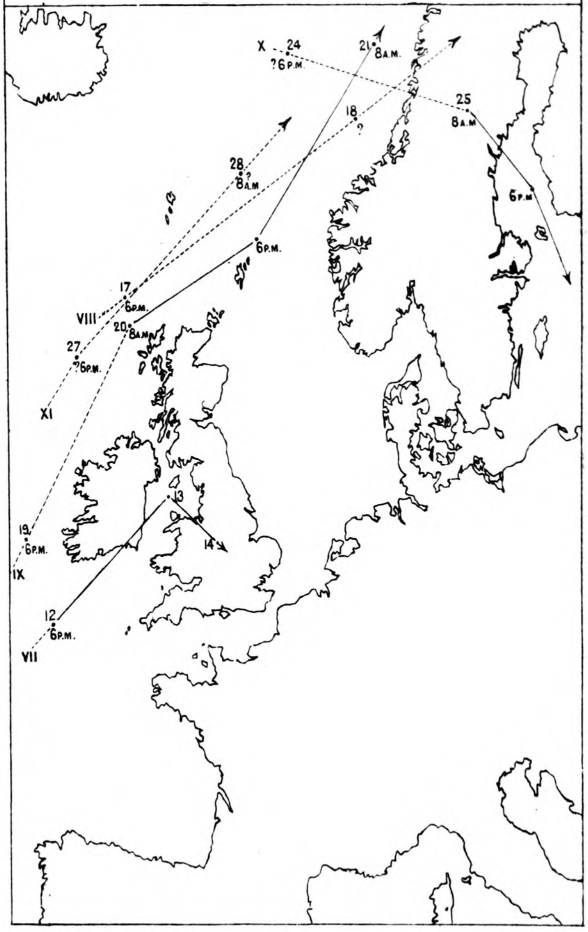
DANGERFIELD, LITH. 22, BEDFORD S^T COVENT GARDEN. 12406.

# MONTHLY WEATHER CHART, FEBRUARY, 1878.

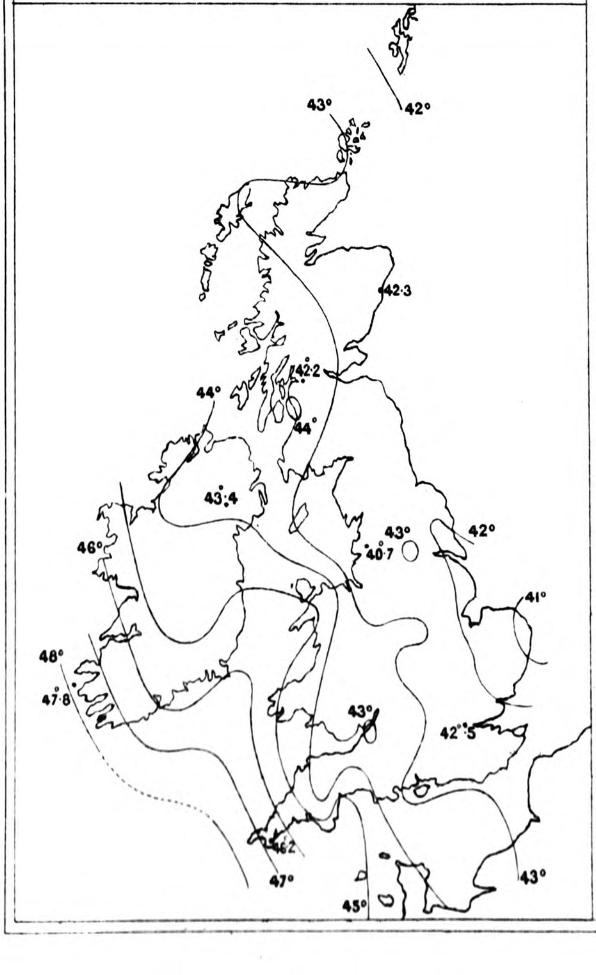
## 1. DISTRIBUTION OF MEAN PRESSURE


29·95
30·00
30·05
30·089
30·125
30·15
30·10
30·169
30·220
30·25
30·158
30·20
30·285
30·273
30·30

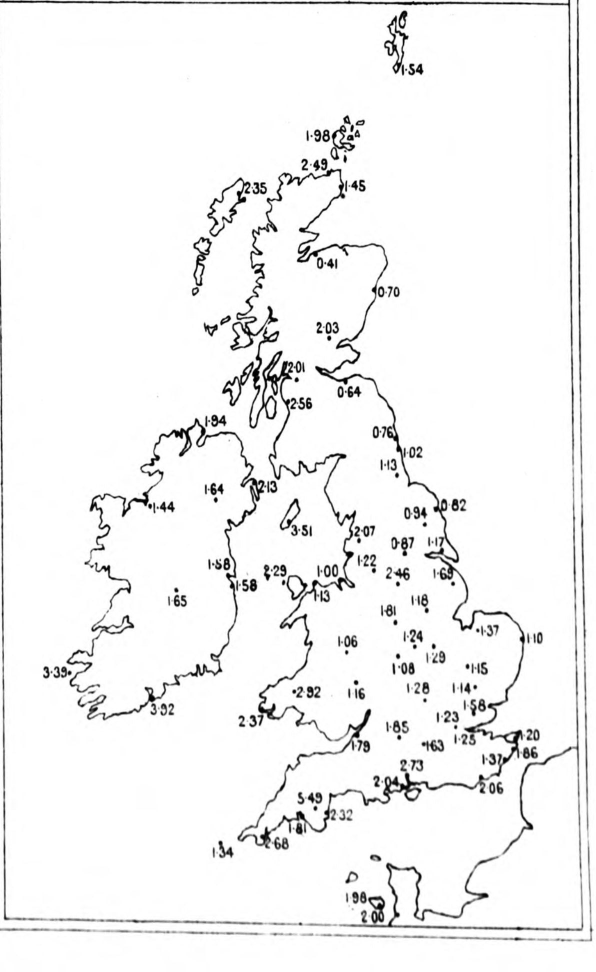
## 2. MOVEMENTS OF DEPRESSIONS.


X
24
?6P.M.
21
8A.M.
25
8A.M.
18
?
28
?
8A.M.
6P.M.
6P.M.
17
6P.M.
VIII
20
8A.M.
27
?6P.M.
XI
19
6P.M.
IX
13
14
12
6P.M.
VII

## 3. DISTRIBUTION OF MEAN TEMPERATURE


43°
42°
42·3
42·2
44°
44°
43·4
43°
40·7
42°
46°
41°
48°
47·8
43°
42·5
46·2
47°
45°
43°

## 4. RAINFALL


1·54
1·98
2·49
2·35
1·45
0·41
0·70
2·03
2·01
2·56
0·64
1·94
0·76
1·02
1·13
1·64
2·13
1·44
0·94
0·82
3·51
2·07
0·87
1·17
1·58
1·58
2·29
1·00
1·22
2·46
1·69
1·13
1·18
1·65
1·81
1·06
1·24
1·37
1·10
1·29
1·08
1·15
3·39
2·92
1·16
1·28
1·14
1·58
3·92
2·37
1·23
1·85
1·63
1·25
1·20
1·79
1·37
1·86
2·73
2·04
2·06
5·49
2·32
1·81
1·34
2·68
1·98
2·00

*To follow Wind Chart for February.*

DANGERFIELD, LITH. 22, BEDFORD ST. COVENT GARDEN. 12407.

## REMARKS FOR MARCH 1878.

(*Tables A. to C., March, with Monthly Wind and Weather Charts.*)

*Wind.*—During the first few days of the month the wind blew generally from between South-west and West, at first rather strongly, but afterwards only as a light or moderate breeze. At the close of the 5th, however, it freshened, and next morning a strong Westerly wind had become general, and in many places it reached the force of a strong gale. In the course of the day the wind veered to North-west, and for a short time it fell light again; but by the close of the 7th it had once more freshened, and over the northern half of Great Britain it blew a North-westerly gale. This was followed by moderate winds from the same quarter, until, on the 9th, the wind became light and variable for a few hours, during which it backed to the Southward. On the 10th, light or moderate Westerly breezes were general again, and they continued to blow without any important increase of force till the following day, when they rose to a moderate gale on the north-east coasts, at the same time that the direction veered to North-west. Light Northerly winds then succeeded for a couple of days, veering at the close of the 13th to North-east over the south-eastern portion of England and freshening for a short time. On the 14th an anticyclone had become established over the kingdom, and light variable anticyclonic currents were experienced generally. These were at first Easterly over the Channel and southern parts of England, but by the 17th they had backed to North in those districts, and to West in the North of Scotland. On the following morning West was once more the general direction, and for some days it continued to blow with light or moderate force from between West and North, the wind veering or backing with the movements of the centre of high pressure, and under the influence of some low-pressure areas over northern Scandinavia. By the close of the 24th the anticyclone had disappeared, and the Northerly wind had freshened generally, and for a short time it blew a gale over St. George's Channel. Until the 27th, moderate winds, varying in direction between North and West continued to blow, and these were followed by a short spell of light variable airs till the afternoon of the 28th, when the direction became generally Easterly and the force began to increase. A strong Easterly gale was experienced over our Channel coasts and southern England on the 29th, but in the course of the day the wind backed generally to North, and continued to blow from that point throughout the 30th; it then backed still further to West, the direction at the close of the 31st varying in different parts of the kingdom between South-west and North-west, and the force from a light breeze to a moderate gale. The winds which were most generally experienced during the month were therefore those which blew from between West and North, the percentage of North-easterly and even of Easterly winds, however, being considerable at several stations.

*Pressure.*—The distribution of pressure for the month shown by the mean isobars on the monthly chart, indicated rather steep gradients for North-westerly winds. The means were everywhere rather above the average, but in the south-western portion of the kingdom the excess was especially marked, being three-tenths of an inch above the mean of 20 years. The range of pressure was not unusually great, and varied from 1·8 inch at Aberdeen, to 1·4 inch at Falmouth. The lowest readings of the barometer occurred at the close of the month, and the highest generally on the 16th or 17th, a reading of 30·72 inches being recorded at Armagh on the earlier of the two days.

*Movements of the Depressions.*—An area of high pressure lay over or near the British Isles during the first three weeks of the month, and the earlier depressions which reached our area from the westward, after arriving upon the Scandinavian coast, travelled in a south-easterly direction to the southern Baltic and Germany. Later on, these were succeeded by thers which followed a more easterly route, but at a considerable distance to the northward of Scotland. On the 24th, a depression passed up the English Channel to the North Sea, and afterwards another followed a similar track to the Netherlands and then on to the Baltic and Germany.

*Temperature.*—The mean temperature was upon the whole nearly normal, both in amount and distribution, ranging from about 48° at Scilly, to 38° at the Shetlands. The maxima were most generally recorded quite early in the month, and the minima as a rule at its close. At Thurso the thermometer fell to 18° on the 29th, and at York to 19° on the 25th, while at many other stations it fell to between 20° and 25°. The maxima on the other hand were not high, 61° recorded both at Leith and Nottingham being the highest, and as a rule the highest temperatures observed were not much above 55°.

*Vapour Tension.*—The mean values decreased from 0·28 inch at Scilly, to 0·19 inch in the east of Scotland, but over the whole of central and northern England and over Scotland, they nowhere amounted to much more than 0·2 inch. *Relative Humidity* was also pretty uniformly distributed over the kingdom.

*Rainfall* was rather below the average in most places. The heaviest falls occurred in some places at the beginning of the month, but at many more not until towards its close; it was, however, at only two or three stations that more than an inch fell in 24 hours.

TABLE A., MARCH.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of MARCH 1878; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE In the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation = 100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia - - | 30·205 | 29·294 | 31st, 9 p.m. | 30·710 | 17th, 10 a.m. | 1·416 | 47·4 | 35·8 | 30th, 8 a.m. | 55·9 | 20th, 3 p.m. | 20·1 | ·270 | 83 | 1·859 |
| Armagh - - | ·117 | ·264 | 31st, Midt. | ·719 | 16th, 10 a.m. | 1·455 | 42·6 | 30·4 | 28th, 6 a.m. | 53·3 | 21st, Noon | 22·9 | ·227 | 84 | 1·405 |
| Glasgow - - | 30·008 | 29·071 | 31st, Midt. | ·672 | 16th, 10 a.m. | 1·601 | 41·1 | 27·3 | 28th, 6 a.m. | 53·5 | 19th, 1 p.m.<br>2 p.m. | 26·2 | ·196 | 76 | 1·597 |
| Aberdeen - - | 29·937 | 28·865 | 31st, Midt. | ·666 | 16th, 8 a.m. | 1·801 | 39·1 | 22·0 | 28th, 7 a.m. | 54·4 | 20th, 2 p.m. | 32·4 | ·185 | 78 | 2·240 |
| Falmouth - - | 30·177 | 29·035 | 29th, 4 a.m. | ·693 | 5th, 10 a.m.<br>11 a.m. | 1·658 | 45·4 | 32·0 | 30th, 10 a.m. | 54·7 | 7th, 11 a.m.<br>2 p.m. | 22·7 | ·242 | 80 | 2·230 |
| Stonyhurst - - | ·054 | ·162 | 31st, Midt. | ·701 | 16th, 11 a.m. | 1·539 | 40·5 | 25·8 | 24th, 6 a.m. | 54·0 | 19th, 1 p.m. | 28·2 | ·200 | 80 | 2·632 |
| Kew - - | 30·075 | 29·178 | 29th, 5 a.m. | 30·666 | 16th, 11 a.m.<br>9 p.m. | 1·488 | 42·8 | 27·5 | 26th, 7 a.m. | 57·1 | 7th, 4 p.m. | 29·6 | ·204 | 74 | 1·030 |

TABLE B., MARCH.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Means of | | | Absolute Extremes. | | | |
| | | | | | | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| **0.** SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·867 | 39·8 | 37·9 | 38·9 | 35·1 | 43·3 | 39·2 | 25·3 | 24th | 50·9 | 4th |
| **1.** SCOTLAND, E. | Glenalmond | 29·993 | 40·3 | 37·6 | 39·0 | 32·6 | 46·2 | 39·4 | 21·0 | 28th | 55·0 | 7th, 18th |
| **2.** ENGLAND, N.E. | Seaham | 29·988 | 43·1 | 40·2 | 41·7 | 35·1 | 48·2 | 41·7 | 25·8 | 24th | 59·3 | 18th |
| | Durham* | 29·986 | 43·3 | 38·7 | 41·0 | 34·5 | 48·0 | 41·3 | 24·6 | 9th | 60·5 | 18th |
| | Hull | 30·020 | 42·5 | 40·6 | 41·6 | 35·8 | 48·9 | 42·4 | 27·0 | 23rd | 59·5 | 8th |
| | Kelstern 𝔐 | 30·032 | 40·4 | 37·8 | 39·1 | 34·1 | 47·4 | 40·8 | 25·9 | 23rd | 57·0 | 21st |
| **3.** ENGLAND, E. | Hillington 𝔐 | 30·019 | 41·6 | 39·0 | 40·3 | 34·7 | 49·0 | 41·9 | 22·8 | 28th | 57·7 | 1st |
| | Audley End 𝔐 | 30·034 | 41·3 | 39·5 | 40·4 | 34·4 | 48·2 | 41·3 | 24·2 | 17th | 58·2 | 1st |
| | Chigwell Row | 30·092 | 41·5 | 41·0 | 41·3 | 36·1 | 48·1 | 42·1 | 25·5 | 23rd | 56·0 | 1st, 3rd |
| **4.** MIDLAND COUNTIES. | Wakefield 𝔐 | 30·038 | 42·2 | 40·9 | 41·6 | 36·4 | 48·7 | 42·6 | 26·3 | 28th | 60·0 | 1st |
| | Buxton 𝔐 | 30·079 | 38·7 | 37·4 | 38·1 | 34·1 | 44·3 | 39·2 | 23·4 | 27th | 52·9 | 1st, 2nd |
| | Cheadle 𝔐 | 30·068 | 39·3 | 38·7 | 39·0 | 34·0 | 46·1 | 40·1 | 21·9 | 26th | 52·5 | 2nd |
| | Leicester | 30·067 | 41·7 | 41·4 | 41·6 | 36·2 | 48·3 | 42·3 | 26·0 | 24th | 56·8 | 1st |
| | Uppingham | 30·057 | 40·4 | 38·8 | 39·6 | 34·5 | 47·5 | 41·0 | 24·2 | 24th | 55·7 | 1st |
| | Oscott | 30·078 | 40·8 | 39·4 | 40·1 | 35·4 | 47·4 | 41·4 | 25·0 | 23rd | 56·9 | 3rd |
| | Churchstoke 𝔐 | 30·115 | 40·7 | 39·9 | 40·3 | 35·2 | 47·0 | 41·1 | 25·3 | 14th, 15th, 25th | 56·4 | 1st |
| | Hereford 𝔐 | 30·097 | 42·5 | 41·2 | 41·9 | 36·1 | 49·0 | 42·6 | 26·1 | 14th | 56·8 | 1st |
| **5.** ENGLAND, S. | Marlborough 𝔐 | 30·113 | 41·1 | 39·7 | 40·4 | 34·9 | 49·2 | 42·1 | 24·3 | 23rd | 56·7 | 2nd, 3rd, 7th |
| | Strathfield Turgiss 𝔐 | 30·097 | 42·6 | 40·9 | 41·8 | 35·4 | 50·3 | 42·9 | 24·0 | 17th | 58·5 | 7th |
| | Ramsgate 𝔐 | 30·050 | 42·2 | 41·1 | 41·7 | 37·1 | 48·3 | 42·7 | 27·8 | 24th | 57·4 | 3rd |
| | Folkestone | 30·057 | 41·7 | 40·5 | 41·1 | 36·3 | 47·6 | 42·0 | 25·1 | 25th | 56·6 | 2nd |
| | Southampton† | 30·105 | 43·8 | 42·1 | 43·0 | 37·6 | 49·5 | 43·6 | 27·2 | 17th | 56·6 | 3rd |
| | Hastings | 30·079 | 41·7 | 40·9 | 41·3 | 36·7 | 47·3 | 42·0 | 23·4 | 25th | 55·6 | 2nd |
| **6.** SCOTLAND, W. | — | — | — | — | — | — | — | — | — | — | — | — |
| **7.** ENGLAND, N.W. | Douglas | 30·059 | 43·1 | 41·4 | 42·3 | 37·1 | 46·5 | 41·8 | 28·3 | 23rd | 52·3 | 7th |
| | Prestwich | 30·050 | 40·3 | 39·6 | 40·0 | 35·4 | 46·3 | 40·9 | 24·7 | 26th | 55·4 | 1st |
| | Llandudno 𝔐 | 30·090 | 44·6 | 42·9 | 43·8 | 39·5 | 49·1 | 44·3 | 31·4 | 14th | 55·2 | 21st |
| **8.** ENGLAND, S.W. | Caermarthen 𝔐 | 30·125 | 44·6 | 41·8 | 43·2 | 38·0 | 51·0 | 44·5 | 26·8 | 14th | 57·9 | 7th |
| | Dartmoor 𝔐 | 30·142 | 39·0 | 37·9 | 38·5 | 34·0 | 43·3 | 38·7 | 24·5 | 30th | 48·8 | 2nd, 7th |
| | Babbacombe 𝔐 | 30·145 | 44·9 | 42·2 | 43·6 | 38·3 | 50·1 | 44·2 | 26·8 | 17th | 58·2 | 7th |
| **9.** IRELAND, N. | Markree Castle | 30·149 | 44·3 | 41·9 | 43·1 | 37·9 | 50·0 | 44·0 | 27·5 | 28th | 54·8 | 2nd, 21st |
| **10.** IRELAND, S. | Dublin | 30·140 | 44·1 | 43·5 | 43·8 | 39·4 | 49·5 | 44·5 | 29·7 | 24th | 59·6 | 1st |
| | Parsonstown | 30·169 | 44·4 | 42·4 | 43·4 | 37·1 | 51·2 | 44·2 | 27·8 | 16th | 58·1 | 18th |
| CHANNEL | Jersey (St. Aubin's) | 30·179 | 46·6 | 44·2 | 45·4 | 40·6 | 50·2 | 45·4 | 34·0 | 23rd, 25th | 56·0 | 2nd |

NOTE.—The stations marked thus 𝔐 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of MARCH 1878.
corrected for Diurnal Range.
Latitude, beginning in each case with the Station lying furthest North.)

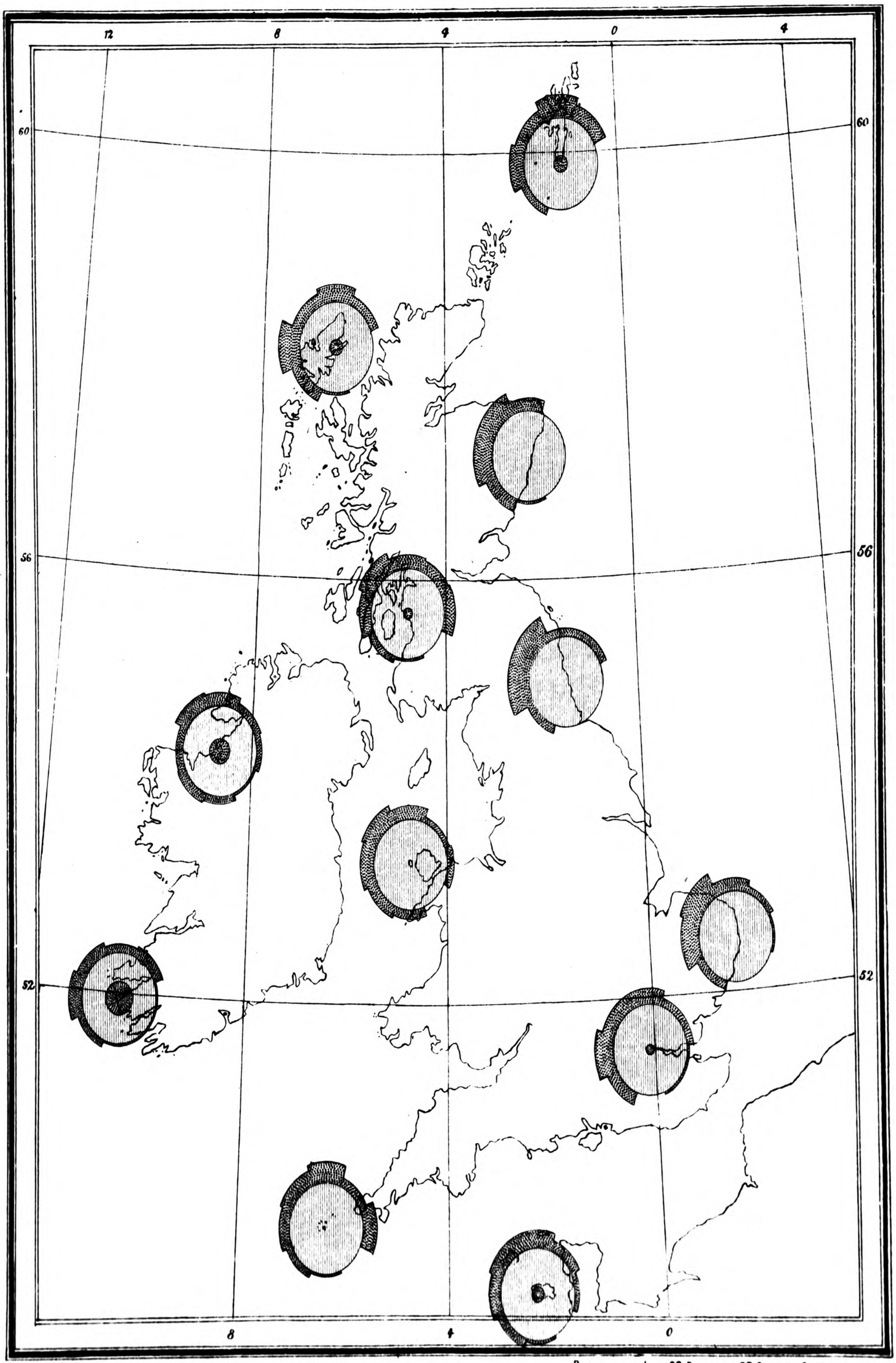
| TENSION OF VAPOUR. | | | RELATIVE HUMIDITY. | | | AMOUNT OF CLOUD (0 to 10). | | | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·209 | ·201 | ·205 | 86 | 89 | 88 | 6·7 | 7·8 | 7·3 | 4·030 | ·510 | 5th | 24 | 11 | 1 | 0 | 1 | 12 | 9 | 14 | 4 | 0 | 0 | 3 | 7 | 17 | 10 | 7 |
| ·192 | ·181 | ·187 | 74 | 78 | 76 | 5·6 | 4·5 | 5·1 | 0·708 | ·238 | 5th | 8 | 6 | 0 | 0 | 6 | 5 | 2 | 16 | 5 | 2 | 0 | 3 | 10 | 13 | 9 | 4 |
| ·218 | ·215 | ·217 | 78 | 87 | 83 | 5·3 | 5·9 | 5·6 | 1·161 | ·290 | 31st | 12 | 11 | 4 | 1 | 2 | 5 | 1 | 12 | 3 | 2 | 0 | 2 | 6 | 21 | 16 | 0 |
| ·211 | ·197 | ·204 | 74 | 81 | 78 | 6·4 | 4·9 | 5·7 | 0·982 | ·247 | 9th | 12 | 10 | 2 | 0 | 4 | 8 | 1 | 10 | 5 | 0 | 1 | 2 | 6 | 12 | 25 | 1 |
| ·215 | ·214 | ·215 | 79 | 86 | 83 | 5·8 | 4·0 | 4·9 | 1·130 | ·380 | 24th | 11 | 2 | 0 | 0 | 3 | 3 | 2 | 9 | 7 | 0 | 1 | 0 | 10 | 9 | 21 | 5 |
| ·231 | ·219 | ·225 | 90 | 94 | 92 | 6·7 | 5·2 | 6·0 | 1·544 | ·348 | 24th | 18 | 10 | 1 | 0 | 3 | 9 | 3 | 11 | 5 | 2 | 0 | 2 | 6 | 14 | 21 | 1 |
| ·227 | ·214 | ·221 | 85 | 87 | 86 | 7·3 | 6·0 | 6·7 | 0·667 | ·112 | 24th | 19 | 9 | 3 | 0 | 2 | 10 | 2 | 14 | 8 | 0 | 1 | 1 | 6 | 8 | 24 | 0 |
| ·219 | ·213 | ·216 | 82 | 86 | 84 | 6·5 | 5·8 | 6·2 | 1·350 | ·330 | 31st | 15 | 11 | 0 | 0 | 4 | 12 | 0 | 6 | 6 | 0 | 1 | 0 | 1 | 10 | 38 | 0 |
| ·209 | ·199 | ·204 | 80 | 78 | 79 | 7·5 | 6·5 | 7·0 | 1·230 | ·500 | 28th | 9 | 6 | 1 | 0 | 2 | 11 | 3 | 12 | 7 | 4 | 0 | 1 | 13 | 7 | 17 | 1 |
| ·216 | ·211 | ·214 | 78 | 80 | 79 | 5·8 | 5·1 | 5·5 | 0·740 | ·190 | 1st | 10 | 7 | 0 | 0 | 1 | 4 | 1 | 6 | 3 | 1 | 0 | 2 | 6 | 21 | 15 | 8 |
| ·208 | ·197 | ·203 | 86 | 85 | 86 | 6·7 | 6·2 | 6·5 | 3·330 | ·790 | 1st | 15 | 9 | 1 | 0 | 1 | 12 | 0 | 12 | 7 | 5 | 0 | 0 | 3 | 13 | 22 | 0 |
| ·203 | ·199 | ·201 | 85 | 85 | 85 | 5·9 | 5·9 | 5·9 | 1·200 | ·200 | 1st | 15 | 7 | 0 | 1 | 4 | 8 | 10 | 16 | 6 | 1 | 4 | 3 | 8 | 7 | 17 | 0 |
| ·208 | ·205 | ·207 | 79 | 79 | 79 | 7·4 | 6·3 | 6·9 | 0·690 | ·230 | 27th | 13 | 7 | 0 | 0 | 4 | 17 | 0 | 14 | 6 | 2 | 0 | 4 | 10 | 11 | 10 | 5 |
| ·213 | ·207 | ·210 | 82 | 84 | 83 | 7·9 | 6·3 | 7·1 | 0·658 | ·237 | 27th | 10 | 9 | 0 | 0 | 2 | 14 | 4 | 17 | 4 | 2 | 0 | 0 | 7 | 8 | 19 | 5 |
| ·213 | ·211 | ·212 | 81 | 85 | 83 | 7·8 | 6·8 | 7·3 | 0·900 | ·220 | 27th | 12 | 9 | 0 | 0 | 3 | 17 | 7 | 9 | 8 | 3 | 0 | 2 | 11 | 8 | 21 | 0 |
| ·213 | ·211 | ·212 | 82 | 84 | 83 | 6·5 | 6·3 | 6·4 | 0·914 | ·214 | 1st | 10 | 9 | 0 | 0 | 2 | 11 | 0 | 7 | 6 | 5 | 0 | 1 | 3 | 13 | 18 | 9 |
| ·222 | ·220 | ·221 | 80 | 82 | 81 | 6·6 | 6·2 | 6·4 | 0·771 | ·185 | 24th | 15 | 6 | 1 | 0 | 2 | 11 | 0 | 6 | 5 | 1 | 0 | 0 | 2 | 8 | 14 | 26 |
| ·221 | ·216 | ·219 | 84 | 87 | 85 | 6·9 | 5·8 | 6·4 | 1·655 | ·624 | 28th | 11 | 6 | 0 | 0 | 4 | 12 | 0 | 7 | 4 | 1 | 0 | 0 | 7 | 12 | 9 | 22 |
| ·219 | ·212 | ·216 | 78 | 81 | 80 | 7·6 | 6·4 | 7·0 | 1·175 | ·728 | 28th | 8 | 4 | 1 | 0 | 4 | 17 | 0 | 9 | 6 | 4 | 1 | 0 | 9 | 12 | 17 | 4 |
| ·226 | ·213 | ·220 | 83 | 81 | 82 | 7·2 | 5·2 | 6·2 | 2·176 | ·643 | 31st | 16 | 10 | 6 | 0 | 3 | 9 | 3 | 0 | 9 | 1 | 0 | 0 | 16 | 18 | 16 | 2 |
| ·230 | ·217 | ·224 | 87 | 86 | 87 | 7·8 | 5·8 | 6·8 | 1·970 | ·840 | 28th | 14 | 9 | 2 | 0 | 1 | 12 | 1 | 21 | 3 | 2 | 1 | 2 | 6 | 14 | 13 | 0 |
| ·219 | ·217 | ·218 | 75 | 79 | 77 | 7·0 | 6·0 | 6·5 | 1·600 | ·487 | 28th | 12 | 5 | 0 | 0 | 5 | 12 | 2 | 6 | 12 | 1 | 1 | 1 | 8 | 4 | 29 | 0 |
| ·221 | ·214 | ·218 | 81 | 81 | 81 | 7·9 | 5·3 | 6·6 | 2·315 | 1·060 | 28th | 14 | 7 | 1 | 0 | 2 | 12 | 8 | 14 | 11 | 1 | 1 | 1 | 6 | 15 | 13 | 0 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·239 | ·230 | ·235 | 84 | 86 | 85 | 6·7 | 5·9 | 6·3 | 2·373 | ·722 | 1st | 16 | 7 | 2 | 0 | 1 | 9 | 5 | 16 | 4 | 7 | 0 | 0 | 3 | 11 | 18 | 3 |
| ·209 | ·212 | ·211 | 84 | 87 | 86 | 6·3 | 5·8 | 6·1 | 1·671 | ·507 | 1st | 11 | 9 | 1 | 0 | 2 | 13 | 2 | 13 | 9 | 1 | 0 | 3 | 7 | 19 | 6 | 4 |
| ·232 | ·225 | ·229 | 77 | 80 | 79 | 7·2 | 6·9 | 7·1 | 1·850 | ·590 | 1st | 15 | 7 | 2 | 1 | 2 | 14 | 1 | 8 | 10 | 5 | 1 | 0 | 2 | 25 | 11 | 0 |
| ·256 | ·248 | ·252 | 86 | 91 | 89 | 7·3 | 6·9 | 7·1 | 2·040 | ·270 | 1st, 5th, 23rd. | 17 | 6 | 3 | 0 | 2 | 15 | 0 | 21 | 2 | 4 | 1 | 0 | 7 | 6 | 11 | 10 |
| ·213 | ·213 | ·213 | 88 | 91 | 89 | 7·2 | 6·0 | 6·6 | 4·550 | 1·680 | 1st | 16 | 8 | 1 | 0 | 1 | 12 | 3 | 7 | 9 | 4 | 0 | 1 | 2 | 10 | 20 | 9 |
| ·235 | ·229 | ·232 | 78 | 84 | 81 | 6·3 | 5·5 | 5·9 | 2·130 | 1·200 | 28th | 9 | 6 | 2 | 0 | 3 | 10 | 3 | 13 | 8 | 2 | 0 | 0 | 7 | 12 | 16 | 4 |
| ·247 | ·241 | ·244 | 84 | 88 | 86 | 7·1 | 5·6 | 6·4 | 2·500 | ·364 | 1st | 25 | 4 | 5 | 0 | 3 | 12 | 0 | 9 | 4 | 2 | 1 | 5 | 7 | 7 | 13 | 14 |
| ·239 | ·239 | ·239 | 81 | 83 | 82 | 6·7 | 6·2 | 6·5 | 1·157 | ·200 | 28th | 17 | 6 | 6 | 0 | 4 | 13 | 3 | 8 | 3 | 4 | 3 | 0 | 5 | 17 | 17 | 5 |
| ·258 | ·248 | ·253 | 87 | 89 | 88 | 6·6 | 6·8 | 6·7 | 1·208 | ·268 | 4th | 17 | 1 | 3 | 0 | 4 | 13 | 1 | 5 | 2 | 1 | 2 | 4 | 13 | 16 | 14 | 5 |
| ·259 | ·241 | ·250 | 80 | 81 | 81 | 7·9 | 6·6 | 7·3 | 2·110 | ·587 | 23rd | 17 | 4 | 4 | 0 | 1 | 14 | 0 | 13 | 10 | 1 | 1 | 1 | 4 | 10 | 14 | 8 |

## TABLE C., MARCH.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of MARCH 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. | | | | | | | | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Means of | | | Absolute Extremes. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | At 8 a.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. | | | | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| **0.** SCOTLAND, N. | Sumburgh Head | 29·784 | 38·0 | 33·2 | 41·9 | 37·6 | 22 | 31st | 50 | 20th | 0·199 | 87 | 7·0 | 2·89 | 0·59 | 5th | 24 | 7 | 0 | 0 | 5 | 14 | 7 | 10 | 6 | 0 | 0 | 0 | 2 | 6 | 5 | 2 |
| | Thurso | 29·872 | 39·2 | 34·4 | 46·6 | 40·5 | 18 | 29th | 59 | 1st | ·222 | 92 | 9·2 | 5·12 | 0·59 | 5th | 26 | 11 | 1 | 0 | 0 | 24 | 7 | 6 | 1 | 0 | 0 | 7 | 7 | 3 | 6 | 1 |
| | Wick | 29·875 | 38·5 | 32·7 | 45·5 | 39·1 | 20 | 31st | 54 | 19th, 20th | ·205 | 89 | 6·7 | 2·96 | 0·43 | 31st | 23 | 6 | 0 | 0 | 7 | 16 | 2 | 2 | 0 | 0 | 0 | 3 | 4 | 7 | 14 | 1 |
| | Stornoway | 29·927 | 39·5 | 34·7 | 43·7 | 39·2 | 24 | 29th | 52 | 3rd | ·216 | 90 | 7·1 | 3·59 | 0·69 | 5th | 26 | 11 | 2 | 0 | 5 | 17 | 6 | 6 | 3 | 0 | 0 | 1 | 5 | 10 | 4 | 2 |
| **1.** SCOTLAND, E. | Nairn | 29·948 | 37·7 | 34·1 | 45·3 | 39·7 | 22 | 28th | 56 | 18th | ·191 | 85 | 4·9 | 1·51 | 0·29 | 26th | 16 | 6 | 0 | 0 | 12 | 9 | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 12 | 5 | 10 |
| | Aberdeen | 29·918 | 37·6 | 34·0 | 45·6 | 39·8 | 21 | 28th | 56 | 18th, 20th | ·187 | 83 | 5·7 | 2·08 | 0·35 | 26th | 16 | 13 | 0 | 0 | 11 | 12 | 5 | 5 | 0 | 0 | 0 | 1 | 5 | 10 | 10 | 0 |
| | Leith | 29·967 | 40·2 | 35·2 | 49·3 | 42·3 | 25 | 28th | 61 | 19th | ·211 | 85 | 4·9 | 0·64 | 0·22 | 4th | 12 | 4 | 3 | 0 | 9 | 6 | 2 | 1 | 4 | 0 | 1 | 0 | 3 | 15 | 5 | 2 |
| **2.** ENGLAND, N.E. | Shields | 30·001 | 40·1 | 35·1 | 47·1 | 41·1 | 26 | 25th | 58 | 1st, 18th | ·199 | 80 | 5·1 | 1·23 | 0·24 | 29th | 14 | 11 | 3 | 0 | 11 | 10 | 6 | 3 | 3 | 0 | 0 | 0 | 3 | 11 | 11 | 0 |
| | Scarborough | 30·005 | 41·9 | 38·2 | 47·3 | 42·8 | 29 | 3rd | 58 | 1st | ·215 | 82 | 6·5 | 1·47 | 0·20 | 27th | 16 | 9 | 6 | 0 | 7 | 15 | 3 | 7 | 2 | 2 | 0 | 1 | 2 | 9 | 8 | 0 |
| | York | 30·037 | 39·7 | 34·5 | 48·9 | 41·7 | 19 | 25th | 59 | 1st | ·205 | 84 | 5·0 | 1·11 | 0·23 | 9th | 13 | 7 | 0 | 0 | 12 | 11 | 3 | 11 | 1 | 1 | 0 | 1 | 3 | 10 | 4 | 0 |
| **3.** ENGLAND, E. | Yarmouth | 30·015 | 39·8 | 35·7 | 46·2 | 41·0 | 29 | 23rd, 25th 26th, 28th. | 57 | 1st | ·213 | 88 | 6·4 | 1·77 | 0·25 | 25th | 23 | 12 | 5 | 0 | 7 | 10 | 7 | 5 | 2 | 1 | 0 | 0 | 3 | 9 | 11 | 0 |
| | Cambridge | 30·065 | 39·4 | 34·5 | 50·4 | 42·5 | 25 | 23rd | 59 | 1st, 3rd, 20th. | ·210 | 87 | 7·5 | 1·04 | 0·34 | 24th | 14 | 6 | 2 | 0 | 6 | 19 | 1 | 3 | 2 | 1 | 0 | 1 | 6 | 3 | 15 | 0 |
| **4.** MIDLAND COUNTIES. | Nottingham | 30·077 | 40·5 | 35·1 | 50·6 | 42·9 | 23 | 23rd, 26th | 61 | 3rd | ·211 | 84 | 6·7 | 0·57 | 0·12 | 28th | 9 | 9 | 2 | 0 | 9 | 16 | 5 | 7 | 1 | 0 | 1 | 2 | 6 | 6 | 5 | 3 |
| | Oxford | 30·095 | 39·6 | 36·4 | 48·5 | 42·5 | 27 | 23rd | 58 | 1st | ·211 | 89 | 7·1 | 0·75 | 0·31 | 31st | 9 | 3 | 0 | 0 | 9 | 20 | 1 | 6 | 2 | 1 | 0 | 0 | 4 | 10 | 5 | 3 |
| **5.** ENGLAND, S. | London | 30·080 | 40·2 | 36·1 | 49·7 | 42·9 | 25 | 17th, 26th | 59 | 3rd | ·205 | 83 | 7·5 | 1·12 | 0·52 | 28th | 10 | 6 | 1 | 0 | 3 | 16 | 5 | 6 | 3 | 1 | 1 | 0 | 5 | 8 | 6 | 1 |
| | Dover | 30·055 | 41·4 | 38·1 | 46·9 | 42·5 | 28 | 25th | 54 | 6th, 7th, 11th, 18th | ·216 | 84 | 5·5 | 2·11 | 0·43 | 1st | 17 | 7 | 6 | 0 | 9 | 10 | 1 | 4 | 3 | 1 | 1 | 0 | 2 | 9 | 11 | 0 |
| | Hurst Castle | 30·105 | 42·3 | 36·8 | 49·8 | 43·3 | 27 | 17th | 57 | | ·238 | 89 | 6·1 | 2·14 | 0·68 | 28th | 12 | 2 | 1 | 0 | 8 | 13 | 4 | 9 | 2 | 2 | 0 | 0 | 3 | 6 | 7 | 2 |
| **6.** SCOTLAND, W. | Ardrossan | 30·020 | 41·0 | 37·7 | 48·3 | 43·0 | 30 | 26th, 28th, 29th. | 54 | 20th | ·202 | 79 | 6·1 | 1·50 | 0·36 | 4th | 14 | 3 | 0 | 0 | 10 | 16 | 5 | 5 | 4 | 4 | 0 | 1 | 2 | 6 | 8 | 1 |
| **7.** ENGLAND, N.W. | Liverpool | 30·080 | 41·5 | 38·7 | 46·7 | 42·7 | 30 | 25th | 56 | 1st | ·215 | 83 | 7·1 | 1·24 | 0·21 | 27th | 14 | 3 | 0 | 0 | 6 | 15 | 1 | 2 | 5 | 3 | 0 | 1 | 5 | 10 | 5 | 0 |
| | Holyhead | 30·114 | 43·0 | 40·5 | 47·9 | 44·2 | 32 | 25th | 54 | 7th, 21st | ·257 | 93 | 6·2 | 1·11 | 0·21 | 1st | 15 | 3 | 3 | 0 | 8 | 9 | 1 | 5 | 2 | 3 | 0 | 3 | 5 | 6 | 7 | 0 |
| **8.** ENGLAND, S.W. | Pembroke | 30·147 | 43·2 | 40·7 | 47·3 | 44·0 | 30 | 30th | 54 | 20th | ·247 | 89 | 5·8 | 0·74 | 0·14 | 24th | 10 | 3 | 3 | 0 | 8 | 12 | 5 | 6 | 4 | 1 | 0 | 1 | 3 | 6 | 8 | 2 |
| | Portishead | 30·112 | 41·9 | 36·6 | 50·3 | 43·5 | 27 | 25th | 56 | 1st, 18th | ·224 | 85 | 6·4 | 2·09 | 1·32 | 1st | 8 | 4 | 0 | 0 | 5 | 11 | 8 | 5 | 4 | 2 | 0 | 1 | 6 | 8 | 5 | 0 |
| | Plymouth | 30·152 | 42·1 | 38·7 | 51·4 | 45·1 | 29 | 27th | 60 | 7th | ·232 | 87 | 6·1 | 1·25 | 0·34 | 31st | 11 | 3 | 0 | 0 | 10 | 15 | 2 | 4 | 3 | 0 | 0 | 0 | 2 | 2 | 15 | 5 |
| **9.** IRELAND, N. | Greencastle | 30·056 | 41·9 | 37·6 | 48·3 | 43·0 | 31 | 16th, 28th, 29th. | 54 | 2nd, 15th | ·236 | 90 | 8·3 | 3·10 | 0·46 | 4th | 22 | 7 | 2 | 0 | 3 | 21 | 1 | 7 | 4 | 0 | 0 | 5 | 4 | 8 | 3 | 0 |
| | Donaghadee | 30·076 | 41·9 | 38·5 | 47·3 | 42·9 | 32 | 14th, 24th | 53 | 2nd, 7th, 20th. | ·230 | 87 | 5·0 | 1·27 | 0·34 | 1st | 16 | 3 | 0 | 0 | 10 | 6 | 3 | 5 | 2 | 2 | 1 | 2 | 2 | 13 | 4 | 0 |
| **10.** IRELAND, S. | Kingstown | 30·133 | 43·3 | 40·5 | 48·6 | 44·6 | 32 | 23rd, 24th | 60 | 1st | ·229 | 81 | 6·2 | 1·02 | 0·23 | 28th | 16 | 4 | 1 | 0 | 5 | 9 | 5 | 2 | 1 | 1 | 0 | 4 | 0 | 12 | 10 | 1 |
| | Valencia | 30·212 | 46·2 | 42·4 | 52·5 | 47·5 | 34 | 16th | 57 | 21st | ·263 | 85 | 7·1 | 1·73 | 0·33 | 4th | 19 | 0 | 0 | 0 | 2 | 12 | 5 | 3 | 4 | 1 | 1 | 1 | 3 | 6 | 4 | 8 |
| | Roche's Point | 30·197 | 44·8 | 41·0 | 50·8 | 45·9 | 34 | 23rd, 25th, 29th. | 55 | 1st, 2nd, 3rd, 6th, 7th, 12th. | ·247 | 83 | 5·6 | 1·61 | 0·32 | 31st | 11 | 2 | 1 | 0 | 5 | 4 | 4 | 9 | 4 | 1 | 0 | 1 | 2 | 8 | 6 | 0 |
| CHANNEL ISLANDS | Scilly | 30·191 | 47·3 | 44·9 | 50·0 | 47·5 | 36 | 30th | 56 | 3rd | ·283 | 88 | 8·7 | 1·44 | 0·41 | 31st | 17 | 1 | 5 | 0 | 0 | 19 | 6 | 8 | 3 | 6 | 0 | 1 | 2 | 5 | 6 | 0 |
| | Jersey | 30·124 | 45·0 | 41·3 | 49·2 | 45·3 | 34 | 24th | 55 | 20th | ·255 | 86 | 7·3 | 2·01 | 0·58 | 23rd | 18 | 4 | 3 | 0 | 2 | 13 | 6 | 7 | 4 | 2 | 0 | 1 | 3 | 5 | 7 | 2 |

# MONTHLY WIND CHART FOR MARCH 1878.

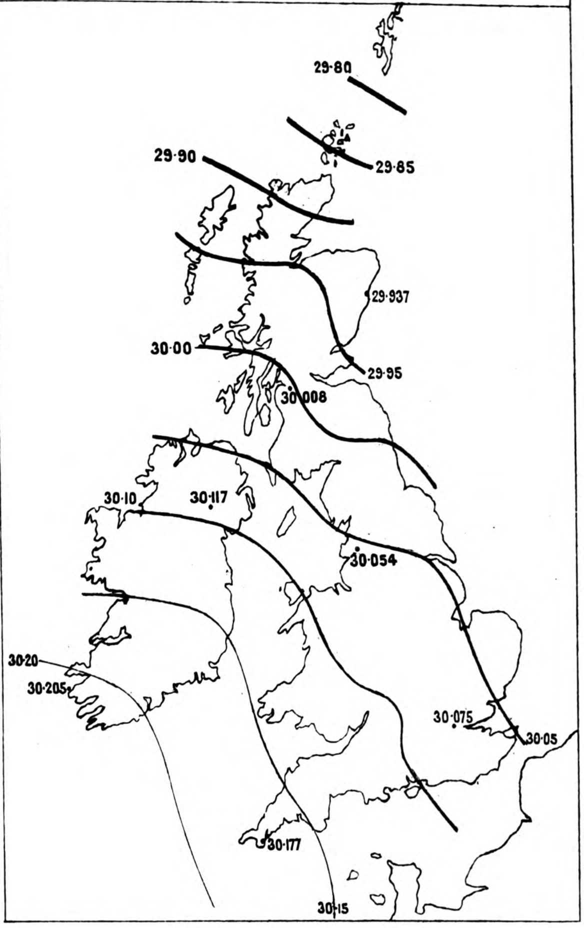

12
8
4
0
4
60
60
56
56
52
52
8
4
0

*To face p. 38.*

DANGERFIELD, LITH. 22, BEDFORD ST COVENT GARDEN. 12406.

# MONTHLY WEATHER CHART, MARCH, 1878.

## 1. DISTRIBUTION OF MEAN PRESSURE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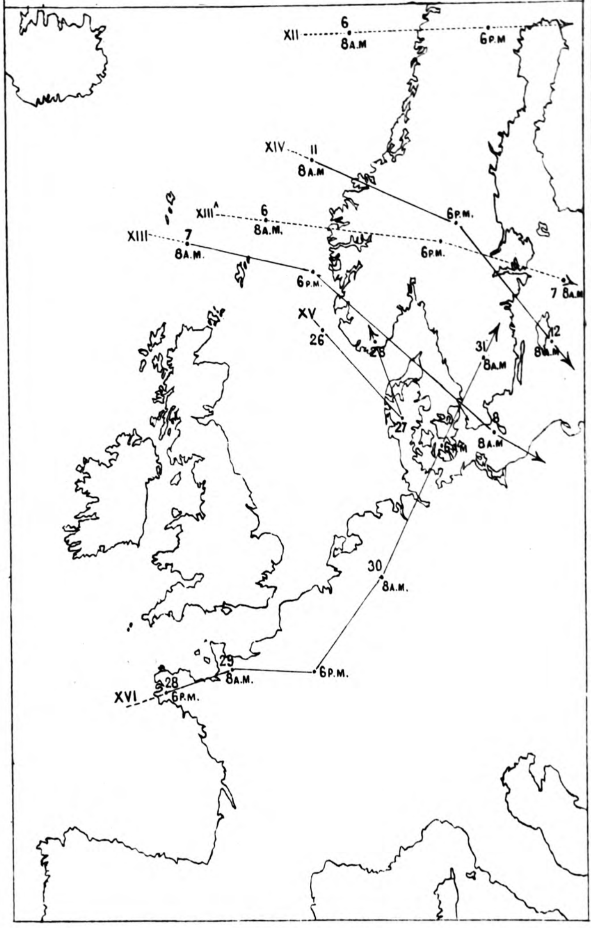
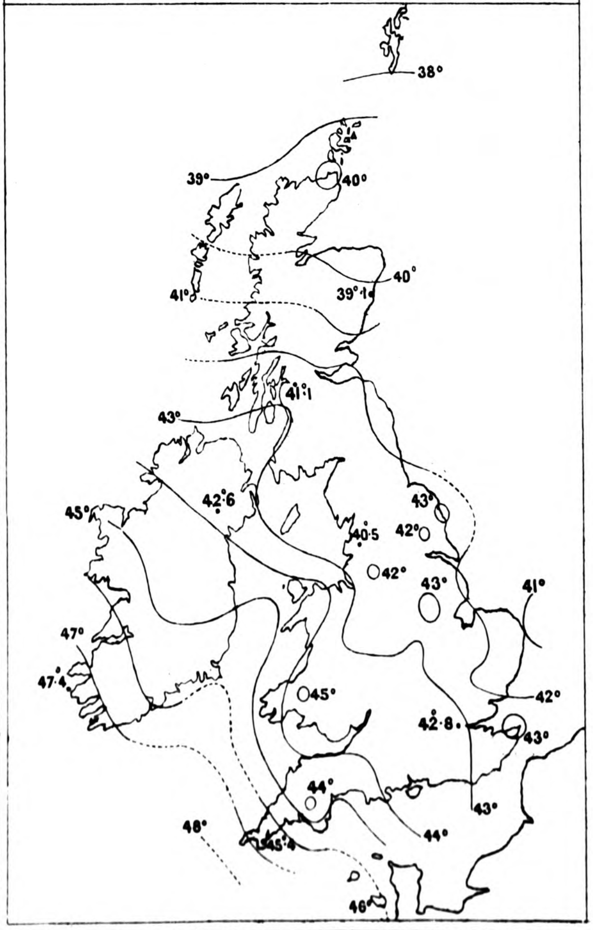
29·90
29·937
29·95
30·00
30·008
30·117
30·10
30·054
30·20
30·205
30·075
30·05
30·177
30·15

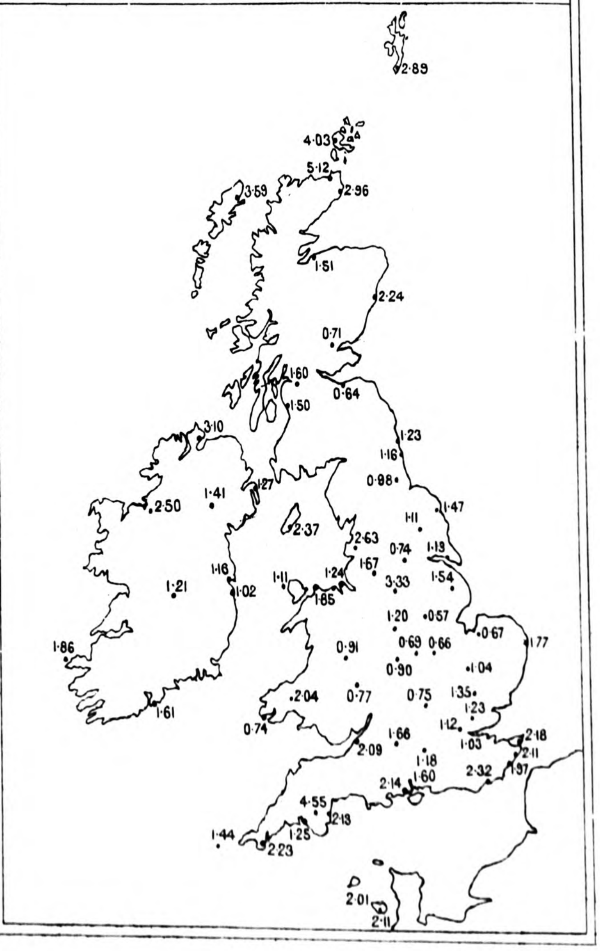
## 2. MOVEMENTS OF DEPRESSIONS.


XII
6
8A.M
6P.M
XIV
11
8A.M
6P.M.
XIII^
6
8A.M.
6P.M.
7 8A.M
XIII
7
8A.M.
6P.M.
XV
26
28
27
31
8A.M
12
8A.M
8
8A.M
6P.M
30
8A.M.
29
8A.M.
6P.M.
XVI
28
6P.M.

## 3. DISTRIBUTION OF MEAN TEMPERATURE


38°
39°
40°
40°
41°
39°·1
41°·1
43°
42°·6
45°
43°
40·5
42°
42°
43°
41°
47°
47·4
45°
42·8
42°
43°
44°
43°
44°
48°
45°·4
46°

## 4. RAINFALL


2·89
4·03
5·12
2·96
3·59
1·51
2·24
0·71
1·60
0·64
1·50
3·10
1·23
1·16
0·98
1·41
2·50
1·27
1·47
2·37
1·11
2·63
0·74
1·19
1·67
1·16
1·02
1·21
1·11
1·24
3·33
1·54
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0·67
1·86
0·91
0·69
0·66
1·77
0·90
1·04
2·04
0·77
0·75
1·35
1·23
1·61
0·74
1·12
1·66
2·18
2·09
1·03
2·11
1·18
2·32
1·97
1·60
2·14
4·55
2·13
1·44
1·25
2·23
2·01
2·11

*To follow Wind Chart for March.*

DANGERFIELD, LITH 22, BEDFORD ST. COVENT GARDEN. 12407.

# PART II.

## SECTION I.

## GENERAL SUMMARY FOR THE QUARTER.

THE only phenomenon of special interest in the weather of these three months was the very high temperature experienced over central England for a short time in June. During a considerable portion of the quarter the weather was unsettled, although the disturbances experienced were not serious; and, notwithstanding that the mean pressure in each of the three months was rather below the average of the 20 years 1861–1880, the mean temperature, when compared with the value for the same period, was on the whole normal.

April 1st–7th.—During the night of the 31st of March two depression centres travelled across the British Isles, one—the larger of the two—passing across the northern portion of Scotland, while the other traversed the southern and central counties of England; squalls, with snow in the north, and hail and rain elsewhere, accompanied both disturbances. At 8 a.m. on the 1st the centre of the northern depression (No. XVII.) was lying a little to the southward of the Shetlands, while the smaller one in the south had reached the north of France and Belgium, and the barometer over the whole of western Europe was low. Gradients, however, were not very steep over the British Isles, and therefore the wind was moderate or fresh in force, and generally Westerly or North-westerly in direction, over the whole of the United Kingdom. The smaller depression disappeared in the course of the day, but the larger one continued nearly stationary for several hours, and in the meantime slowly became filled up.

By the close of the 1st the barometer had begun to rise very generally, and it continued to do so with but little interruption until the 6th, the wind soon falling light, and the weather continuing generally fine all over the British Isles. The centre of a very shallow depression which had passed across England was observed over Denmark on the morning of the 4th; but the distribution of pressure had then become very uniform over the British Isles, and as the disturbance travelled away northward this condition became extended to the whole of western Europe. On the 6th the highest readings were found over the north of France and the south of England, but the barometer was then falling briskly in the south of France and over the Peninsula, while it was rising as quickly over Germany and Scandinavia, and therefore by the following day a band of high pressure had become developed over the latter region while a large depression seemed to be approaching south-western Europe from the ocean. The fall of the barometer had also by that time extended to our southern and south-western stations, and in the course of the day the wind, which had become Easterly in direction, increased in force till it blew a strong Easterly gale at the mouth of the English and Saint George's Channels, but with fine and rather warmer weather.

April 8th–15th.—During this interval the general distribution of pressure underwent a complete change. The anticyclone remained over Scandinavia until the 12th, but it then began to decrease somewhat in height, and to move southwards, so that by the 15th it covered the greater part of southern Europe and the Mediterranean, whilst its place in the north was again occupied by a large area of comparatively low readings.

The depression already referred to as approaching the south-west of Europe on the 7th made itself still more felt throughout the 8th, when, owing to the presence of the anticyclone over North-western Europe rather steep gradients prevailed over the British Isles, and the wind-force varied from a strong breeze to a hard gale, but, except in the South-west, with tolerably dry weather. The fall of the barometer was considerable only at the south-western stations; in the south-east of England it was very slight, and in the north of Scotland the mercury did not fall at all. A recovery began in the south-west during the latter part of the 8th, and continued till the close of the 9th, after which for a couple of days pressure remained fairly steady all over the kingdom. A very shallow depression appeared in the Bay of Biscay on the 9th, and passed northwards to southern England, where it became dispersed on the 11th, after causing some heavy local falls of rain, which were especially heavy in the neighbourhood of London. On the 12th pressure gave way very generally, but more briskly at the Irish stations than elsewhere, under the influence of a depression which travelled northwards to the westward of our shores; and simultaneously with the approach of this system the southerly movement of the anticyclone, which has been already referred to, began. With the change in the distribution of pressure which this brought about the Easterly wind veered to the Southward, but did not rise much in force, and at the close of the 15th light Southerly to Westerly winds prevailed over the British Isles, with warm and generally fine weather.

April 16th–20th.—The movements of the barometer over Great Britain throughout this period were everywhere slight; the pressure, although low, undergoing a further gradual but general decrease, which was accompanied by light or moderate, and somewhat variable, winds and quiet weather.

But notwithstanding the absence of any important atmospherical disturbance, the general distribution of pressure over western Europe underwent a very material change, which resulted by the close of the period in the appearance of a new anticyclonic system over Scandinavia and Finland. The lowest pressures were throughout observed to the west or north-west of our Islands, where more than one shallow depression passed in a northerly direction outside our shores, causing gradients to be a little steeper over Great Britain than they were over the Continent. The highest readings continued for some days over the Peninsula and southern Europe, while a second band of high pressure showed itself on the 18th and 19th over the north-eastern limits of our area. At the close of the 20th gradients had become rather steeper over Great Britain owing to the arrival on the south-west coast of Ireland of a shallow depression from the westward (No. XVIII.); and moderate South-westerly winds were reported from the mouth of the Channel with South-easterly winds over the northern portions of the kingdom. The barometer had also fallen in the south of Europe, but an anticyclonic system had become established over Scandinavia and a brisk increase of pressure was still going on in that region.

April 21st–30th.—The anticyclone over northern Europe did not continue very long, but moving slowly to the south-east it disappeared over eastern Russia on the 24th, at which time a new area of high pressure was becoming developed off our north-western coasts.

The barometer rose at all our stations on the 21st, and the depression which had reached us on the previous evening became gradually filled up. A new depression (No. XIX.) arrived upon the French coast on the 23rd and caused a fresh fall of the barometer at our southern stations, while the wind backed to the Eastward, and subsequently to North-east and North, and blew freshly. The centre of this system travelled slowly in an easterly direction across southern Europe, and eventually disappeared over Austria on the 27th. The recovery of pressure in the rear of the depression did not become general over the British Isles till the 24th, when the barometer rose steadily for several hours. With this movement an area of high pressure became developed to the north-westward of Scotland, whence it extended itself over the British Isles and the North Sea to central Europe, where it was observed on the 29th, and during the interval the wind over the United Kingdom gradually backed to the South-eastward, with fine weather. On the 28th, however, a fresh steady fall of the barometer began at all our stations, and continued with but little intermission throughout the two following days. By that time the anticyclone had quite disappeared, and a band of low readings had extended itself over the British Isles and the greater part of central Europe, whilst the highest pressures were once more observed over the north of Sweden.

May 1st–7th.—On the 1st a recovery of pressure took place over the whole of western Europe, and by the following day a second area of high readings had become developed over the Peninsula, while a band of relatively low pressure still stretched from the British Isles across the Continent between the two high-pressure systems. Some shallow depressions passed during the next few days outside our western coasts, but at too great a distance to affect, except in a slight degree, the upward movement of the barometer at our stations. The northern anticyclone, however, travelled to the south-eastward, while at the same time the southern system moved in a north-easterly direction, and by the 5th the conditions which had existed on the 2nd had become just reversed,—pressure being then higher over central Europe than over the Peninsula, while the centre of a well-marked depression, travelling from the northward, was observed over the Gulf of Finland. A fresh fall of the barometer had, however, then begun at our western and southern stations, and on the 6th a large depression arrived off our south-western coasts, causing the wind to blow strongly from the South or South-east at some of our western stations. By the following day this disturbance had disappeared in a northerly direction, and the barometer had risen again in the west; but a band of low pressure once more extended eastwards from our Islands over the Continent, and a new anticyclone had made its appearance over the Gulf of Bothnia. Over the British Isles the wind was light or moderate in force,—from the Westward over the southern portions, and from the Eastward in Scotland.

May 8th–25th.—Throughout this interval the weather continued in a very unsettled state, and the general distribution of pressure underwent several important changes. At the beginning the highest readings were found over Scandinavia, from whence they soon moved southwards to central Europe. A day or two afterwards they shifted again to eastern Russia; and finally, on the 15th they became transferred to southern Europe, in which region they remained till the close of the period.

After rising a little at most of our stations the barometer fell again somewhat briskly in the west on the 10th, owing to a rather large depression (No. XX.) which arrived off the western coasts of Ireland on the following day. Fresh Easterly to Southerly winds were then blowing very generally, and in places they attained the strength of a moderate gale. The centre of this disturbance disappeared to the northward, but a large area of low pressure lay for several days to the westward of our coasts, the barometer falling steadily in the north while it remained very low elsewhere, with moderate or fresh Southerly or South-westerly winds, and a good deal of rain. On the 15th gradients became rather steep, and during the next few days the centres of two or three depressions approached close to our western coasts, skirting our littoral in their progress to the north or north-east, and causing the barometer to oscillate a good deal, while the wind rose at times to a gale from the South-west. On the 19th pressure had become rather high over the Peninsula, and steep gradients became established for Westerly winds; but at the close of the day the barometer rose again at most of our stations, and simultaneously the wind decreased in strength very generally. On the 22nd another rapid fall of the barometer set in in the west and quickly extended to the remainder of the Kingdom, preceding the advance of a deep depression (No. XXII.) from the Atlantic. The centre of this system lay over Ireland at 8 a.m. on the following morning, when the wind was Easterly at the northern stations, Southerly in the east of England, and Westerly in the Channel. The disturbance travelled slowly across England to the North Sea and Scandinavia, and in its rear the wind decreased in strength, and became at first Northerly and afterwards Westerly, with fine weather. At the close of the 25th the highest pressures remained over the Peninsula, and the depression was still observed over Scandinavia; the barometer, however, although still rather low over the United Kingdom, was then rising very generally.

May 26th-June 6th.—The changes of pressure which took place over the United Kingdom during this period were slight. The depression which crossed over our Islands on the 23rd did not finally disappear till the 27th, by which time the highest pressures had become transferred to central Europe, and light Southerly airs had become general over Great Britain. On the morning of the 28th a shallow depression was observed off the coast of Brittany, whence it travelled to the Netherlands and Germany, causing a good deal of rain to fall over France, while with us the wind backed to East and North, with rain on our south and south-east coasts. The depression moved up the Baltic and then persistently remained for several days over Scandinavia, and did not finally quit our area till the 3rd of June. A steady increase of pressure took place over the United Kingdom until the 30th, when it was succeeded by a slight but continuous fall which lasted until the 4th. A small, but well-marked, depression then advanced across England, and caused the area of comparatively high pressure which had for some time existed over the British Isles to move southwards to the Bay of Biscay, where it was observed on the 6th, at the close of which day a fresh fall of the barometer had set in on all our coasts, while at our more exposed stations the wind was freshening from South-east or South.

June 7th-14th.—This was another period of disturbed weather, during which pressure underwent some important changes. The fall of the barometer, which began on the 6th, continued throughout the two following days, and in the interval the area of highest readings moved eastwards from the Bay of Biscay to south-eastern Europe. The fall of the barometer was caused by a series of depressions passing by or over our western and northern coasts, during the passage of which the wind oscillated between South and West, although as a rule it did not blow very strongly. The centre of the deepest and best-defined of these disturbances (No. XXIII.) lay over the south of Ireland on the 11th, and from thence it travelled across the northern counties of England to Scandinavia. The circulation of the wind around this depression was well-marked; the strong Southerly wind, which at first blew over the south of England and Ireland, veering to West, while in Scotland the Easterly wind backed in the rear of the depression and blew from North. As the disturbance moved away, the barometer rose again, and for a couple of days after the close of the 11th the recovery of pressure was brisk at most of our stations. At the same time the general distribution of pressure became somewhat irregular, but gradients decreased, and finer weather prevailed over the British Isles.

June 15th-30th.—During the first two or three days of this period a somewhat unusual phenomenon was presented by a depression (No. XXIV.) which, being first observed over Austria on the 16th, travelled thence in a north-westerly direction across northern Germany and Denmark to the North Sea, where it became filled up. The movements of the barometer over the British Isles were, throughout the last half of the month, gradual and unimportant, and for the greater part of the time the general distribution of pressure all over western Europe was fairly uniform. The weather was quiet and fine, with high temperatures and occasionally heavy thunderstorms, the maximum temperatures at the English inland stations during the last week of the month ranging between 80° and 90°. On the 30th a tolerably well-defined depression was making its appearance over Scandinavia, causing a moderate Northerly wind to blow on our north-east coasts, but without otherwise affecting the weather over the British Isles.

## SECTION II.

### TABLE OF CYCLONIC SYSTEMS.—APRIL, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XVII.<br>April 1-3. | No. XVIII.<br>April 20-21. | No. XIX.<br>April 23-25. |
|---|---|---|---|
| **Form** | Oval | Oval | Elliptical. |
| **Size** | Moderate | Moderate | Moderate. |
| **Depth** | Moderate | Shallow | Shallow. |
| **Where first Observed** | To the southward of the Shetlands | South-west of Ireland | In the Bay of Biscay. |
| **Direction of Motion** | Almost stationary | Easterly | Easterly. |
| **Rate of Motion** | Very slow | Very slow | Very slow. |
| **Regions passed over by Steepest Gradients.** | England and the Netherlands | North-western France and Bay of Biscay. | Bay of Biscay. |
| **Termination** | Became filled up | Became filled up over southern England. | Disappeared over Austria. |
| **Time under Observation** | Two days | One day | Two days. |
| **Accompanying Winds** | Westerly or North-westerly; moderate | Northerly in western Ireland, Westerly in France, Southerly or South-easterly in England, and South-easterly to Easterly in Scotland; moderate to strong. | Easterly, backing to North-east and North as the depression moved away; fresh generally. |
| ,, **Weather** | Dull in the north of our Islands, with rain and snow showers. | Dull and wet, with fog in many places | Generally overcast or very cloudy. |
| ,, **Rainfall** | Moderate in the north and slight elsewhere. Rain and snow showers occurred very generally. | General and heavy in the north of England and south of Scotland. | General at our southern and south-eastern stations and in France. |
| **REMARKS** | Simultaneously with the arrival of this disturbance a small subsidiary centre traversed the south of England and disappeared over the Continent. The main disturbance after reaching the North Sea remained nearly stationary till it became filled up. | This shallow disturbance became filled up soon after it reached southern England. An equally shallow centre was observed simultaneously over northern Italy. | For some time this depression remained nearly stationary over France, where it became to some extent filled up; it then resumed its progress and was finally lost sight of over eastern Europe. |

## TABLE OF CYCLONIC SYSTEMS.—MAY, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XX. May 10-13. | No. XXI. May 16-17. |
|---|---|---|
| **Form** | Unknown; but probably oval | Unknown |
| **Size** | Large | Large |
| **Depth** | Shallow | Moderate |
| **Where first Observed** | South-west of Ireland | Off the coast of Ireland |
| **Direction of Motion** | Northerly | Northerly |
| **Rate of Motion** | Slow | Moderate |
| **Regions passed over by Steepest Gradients** | Ireland | The British Isles |
| **Termination** | Disappeared over the ocean to the northward of our Islands. | Disappeared over the North Sea |
| **Time under Observation** | Three days | Two days |
| **Accompanying Winds** | Easterly to Southerly; fresh in the east, strong to a gale in the west. | Southerly veering to Westerly; strong to a gale, and then becoming moderate. |
| **" Weather** | Dull and unsettled, with thunder and lightning at many places. | Overcast, squally, and unsettled |
| **" Rainfall** | Rain was pretty general, and was heavy in Ireland and at Holyhead. | Very general, and at the south-western stations, heavy. |
| **REMARKS** | This depression, like others which had preceded it during the earlier days of the quarter, kept to the westward of our coasts, the centre merely skirting them in its progress northward. Gradients were not at any time steep. | This depression was another of the series which included the depression just described, and all of which skirted our western coasts without coming sufficiently near to allow of the details of their size and shape being accurately ascertained. They continued to affect our weather from about the 10th to the 19th of the month. |

## TABLE OF CYCLONIC SYSTEMS.—MAY—JUNE, 1878.

| No. XXII.<br>May 22-25. | No. XXIII.<br>June 11-13. | No. XXIV.<br>June 16-17. |
|---|---|---|
| Oval, becoming elongated | Elliptical | Oval. |
| Large | Large | Moderate. |
| Moderate | Shallow | Shallow. |
| To the westward of Ireland | Over the south of Ireland | Over Austria. |
| Easterly, then north-easterly, and northerly | North-easterly | North-north-west. |
| Slow | Slow | Slow. |
| Southern England | Southern England | North Germany and Denmark. |
| Disappeared over the north of Norway | Disappeared over Scandinavia | Filled up over the North Sea. |
| Three days | Two days | Two days. |
| West in the south and East in the north, becoming generally Northerly or North-westerly; moderate to strong. | North-west in the west, West in the south, South in the east, and East in the north of the kingdom, afterwards shifting to North in the north and east; moderate to strong, with gales in the south. | Easterly gales in Scandinavia; West to South-west winds in Denmark. |
| Cloudy and overcast, clearing up in the rear of the depression. | Unsettled, rainy, and squally | Wet and unsettled in the neighbourhood of the depression; moderately fine in British Isles. |
| Very general, but, as a rule, moderate in amount | General, except in the north of Scotland; heavy in Ireland. | General in Denmark, slight elsewhere. |
| This was another depression of slight intensity; it first passed eastwards across England, and then opened out a great deal as it changed its course to the northward. | This system followed closely upon another, which skirted our western coasts, and disappeared to the northward of our Islands; this depression followed a more easterly course than did its predecessor. | The only noteworthy feature in connection with this depression was the unusual direction of its path. |

# TABLE OF GALES.

## No. 7. (ANTICYCLONIC SYSTEM, No. V.)

| Stations. | VELOCITY 30-40 Miles per Hour. | | VELOCITY Exceeding 40 Miles per Hour. | | | | VELOCITY Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | MAXIMUM VELOCITY. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Com-menced. | Direction of Wind. | Com-menced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| April 7-10, 1878. | | | | | | | | | | | | | |
| Sandwick. | 11 p.m. (7th). | S.S.E. | 2 a.m. (8th).<br>6 a.m. (8th).<br>11 p.m. (8th). | S. by E.<br>S.E. by S.<br>S.S.E. | 42<br>46<br>40 | 1<br>13<br>1 | 2 a.m. (9th). | S.S.E. | 27 | 11 a.m. (8th). | S.S.E. | 58 | — |
| | 8 a.m. (9th). | S.E. | — | — | — | — | 1 p.m. (9th). | S.E. | 5 | Noon (9th). | S.E. by S. | 39 | — |
| | 2 p.m. (9th). | S.E. | — | — | — | — | 6 p.m. (9th). | S.E. | 4 | 2 p.m. (9th). | S.E. | 38 | — |
| Aberdeen | 10 a.m. (8th). | S.E. by S. | — | — | — | — | 5 p.m. (8th). | S.E. by S. | 7 | Noon & 2 p.m. (8th).<br>3 p.m. (8th). | S.E.b.S.<br>S.E. | 34 | — |
| Seaham | 11 a.m. (8th). | S.E. by E. | — | — | — | — | 4 p.m. (8th). | S.E. by E. | 5 | 2 p.m. (8th). | S.E. by E. | 38 | — |
| Holyhead. | 9 a.m. (8th). | S.E. by S. | — | — | -- | — | 2 p.m. (8th). | S.E. by E. | 5 | Noon (8th). | S.E. | 39 | 32 miles were recorded at 4 a.m. 8th. |
| | 5 p.m. (8th). | S.E. | — | — | — | — | 7 p.m. (8th). | E. by S. | 2 | 6 p.m. (8th). | S.E. | 31 | |
| | 10 a.m. (9th). | E.S.E. | Noon (9th).<br>3 p.m. (9th). | E.<br>E. | 47<br>43 | 2<br>3 | 7 p.m. (9th). | E. | 9 | 1 p.m. (9th). | E. | 48 | — |
| | 8 p.m. (9th). | E. | — | — | — | — | 2 a.m. (10th). | E. by S. | 6 | 10 p.m. (9th). | E. by S. | 36 | 30 miles were exceeded between 9 a.m. and 3 p.m. 10th (max. veloc. 39 mls.); and occasionally between 7 p.m. 10th and 1 p.m. 11th. |
| Valencia. | 10 a.m. (7th). | E.S.E. | 11 a.m. (7th).<br>7 p.m. (7th).<br>9 p.m. (7th). | E.S.E.<br>E.S.E.<br>E.S.E. | 42<br>40<br>40 | 7<br>1<br>1 | 6 a.m. (8th). | E. by S. | 20 | 2 p.m. (7th). | S.E. by E. | 44 | 30 miles were also exceeded at 8 a.m. and 1 p.m. 8th. |
| | Noon (9th). | E. | — | — | — | — | 3 p.m. (9th). | E. by S. | 3 | 1 p.m. (9th). | E. by S. | 36 | — |
| Falmouth. | 2 a.m. (7th). | E. by S. | 8 a.m. (7th).<br>Midnt. (7th).<br>11 a.m. (8th). | E.S.E.<br>E. by S.<br>E. by S. | 42<br>42<br>40 | 15<br>1<br>1 | 7 p.m. (8th). | E. | 41 | 11 a.m. 6&8p.m. (7th). | E. by S. | 44 | — |
| | 11 p.m. (8th). | E. | — | — | — | — | 7 p.m. (9th). | E. by S. | 20 | 3 & 11 a.m. (9th). | E. by N. | 38 | — |
| | 10 p.m. (9th). | E. by N. | — | — | — | — | 1 a.m (10th). | N.E. | 3 | Midnt. (9th). | E.N.E. | 32 | — |
| Kew | 10 a.m. (8th). | E. | 11 a.m. (8th).<br>4 p.m (8th). | E. by N.<br>E. by N. | 43<br>40 | 1<br>1 | 8 p.m. (8th). | E.N.E. | 10 | 11 a.m. (8th.) | E. by N. | 43 | — |
| | 9 p.m. (8th). | E. | — | — | — | — | 11 p.m. (8th). | E. | 2 | 9 p.m. (8th). | E. | 31 | — |
| | 1 p.m. (9th). | N.E. by E. | — | — | — | — | 6 p.m. (9th). | N.E. by E. | 5 | 2 p.m. (9th). | E. by N. | 33 | 30 miles were also exceeded occasionally on the 9th, and 10th. |
| Yarmouth. | 4 p.m. (7th). | E. by S. | 10 p.m. (7th).<br>3 p.m. (8th). | E.<br>E. | 40<br>44 | 3<br>11 | 10 p.m. (9th). | E. | 54 | 10 p.m. (8th). | E. | 48 | |
| | 11 p.m. (9th). | E. by N. | 4 p.m. (10th). | E. by N. | 41 | 2 | 8 a.m. (11th). | E. | 33 | 5 p.m. (10th). | E. by N. | 41 | — |

## No. 8. (Cyclonic System, No. XXI.)

| Stations. | Velocity 30–40 Miles per Hour. | | Velocity Exceeding 40 Miles per Hour. | | | | Velocity Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | Maximum Velocity. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| May 16–17, 1878. | | | | | | | | | | | | | |
| Sandwick. | 4 p.m. (17th). | W.S.W. | — | — | — | — | 6 p.m. (17th). | W. by S. | 2 | 4 p.m. (17th). | W.S.W. | 38 | — |
| Glasgow | 10 a.m. (17th). | S.S.W. | — | — | — | — | 4 p.m. (17th). | W.S.W. | 6 | 11 a.m. (17th).<br>2 p.m. (17th). | S.W. by S.<br>W.S.W. | 36 | — |
| Alnwick Castle. | 3 a.m. (17th). | SW.b.S. | 7 a.m. (17th).<br>9 a.m. (17th).<br>11 a.m. (17th). | S.S.W.<br>S.S.W.<br>S.W. | 42<br>42<br>51 | 1<br>1<br>8 | 8 p.m. (17th). | W. by S. | 17 | 2 p.m. (17th). | W.S.W. | 59 | — |
| Seaham | 11 a.m. (17th). | S.W. | — | — | — | — | 6 p.m (17th). | S.W. | 7 | 1&2 p.m. (17th). | S.W. | 35 | — |
| Holyhead | Noon (16th). | S. by W. | 4 p.m. (16th).<br>8 p.m. (16th).<br>10 a.m. (17th). | S. by E.<br>S.S.W.<br>S.W. | 45<br>41<br>40 | 3<br>6<br>1 | 8 p.m. (17th). | S.W. by S. | 32 | 5 p.m. (16th). | S. by W. | 49 | — |
| Valencia | 8 a.m. (16th). | S.E. by E. | 11 a.m. (16th). | S.E. | 46 | 18 | 7 a.m. (17th). | S.W. by W. | 23 | 6 p.m. (16th). | S.S.W. | 52 | — |
| Falmouth. | 11 a.m. (16th). | S. by E. | — | — | — | — | 4 p.m. (16th). | S.W. by S. | 5 | 2 p.m. (16th).<br>3 p.m. (16th). | S. by W.<br>S.W. by S. | 34 | — |
| | 5 p.m. (16th). | S.S.W. | — | — | — | — | 8 p.m. (16th). | S.W. | 3 | 6 p.m. (16th). | S.W. by S. | 37 | — |
| | 2 a.m. (17th). | S.S.W. | 4 a.m. (17th). | S.S.W. | 40 | 1 | 6 a.m. (17th). | S.W. by W. | 4 | 4 a.m. (17th). | S.S.W. | 40 | — |
| | 9 a.m. (17th). | S.W. | — | — | — | — | Noon (17th). | S.W. by S. | 3 | 9 a.m. (17th).<br>11 a.m. (17th). | S.W.<br>S.W. by S. | 32 | — |
| Kew | 8 a.m. (17th). | S.W. by S. | — | — | — | — | 10 a.m. (17th). | S.W. by S. | 2 | 8 a.m. (17th). | S.W. by S. | 32 | — |

## TABLE OF ANTICYCLONIC SYSTEMS—JUNE, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. V.<br>April 6-13. | No VI.<br>April 20-28. |
|---|---|---|
| **Form** | Irregular | Varying, but somewhat oval |
| **Size** | Small | Large |
| **Height** | Moderate; maximum readings 30·6 ins. on 9th and 10th. | Small. Maximum reading 30·4 ins. on 22nd |
| **Where first Observed** | Over the Netherlands | Over Norway and Sweden |
| **Direction of Motion** | North-easterly till the 12th, then westerly and southerly. | Southerly till 23rd, then westerly till 26th, then south-easterly. |
| **Rate of Motion** | Very slow | Slow |
| **Regions passed over** | The Netherlands, Denmark, and Scandinavia | The whole of our area |
| **Termination** | Became dispersed | Disappeared over southern Europe |
| **Accompanying Wind** | At first South-easterly then Easterly; strong to moderate. | At first moderately strong from between North and East, then light South-easterly and Southerly winds. |
| „ **Weather** | Fine and dry | Generally clear and bright |
| **REMARKS** | This high-pressure system, after remaining for a few days over northern Scandinavia, returned again to central Europe, becoming at the same time gradually dispersed. During its continuance a depression approached south-western Europe from the ocean, and gradients becoming rather steep the wind blew strongly at some of our stations. (See Gale Table No. 7.) | After decreasing somewhat in height this system moved over the ocean to the northward of our Islands; it then changed its course again and returned in a south-easterly direction to Great Britain, from whence it passed away to southern Europe and became dispersed. |

## TABLE OF ANTICYCLONIC SYSTEMS.—MAY-JUNE 1878.

| No. VII.<br>**May 29—June 1.** | No. VIII.<br>June 4-8. | No. IX.<br>June 19-29. |
|---|---|---|
| Varying, but generally oval - - - - | Oval - - - - - - - - - | Very irregular, becoming oval. |
| Small - - - - - - | Small - - - - - - - - | Large. |
| Very small. Maximum readings 30·2 ins. on 29th and 30th. | Small. Maximum reading 30·3 ins. on 5th and 6th. | Small. Maximum reading 30·3 ins. on 25th 26th, and 27th. |
| Over Ireland - - - - - - - | Over the Bay of Biscay - - - - | Over the Peninsula. |
| Almost stationary; but extending itself in a south-easterly direction. | Easterly - - - - - | North-easterly till 27th, then westerly. |
| Very slow - - - - - - - | Very slow - - - - - - - | Very slow. |
| The United Kingdom - - - - - | England, Denmark, France, and Germany - | The whole of western Europe. |
| Became dispersed - - - - - | Disappeared over Austria - - - - | Disappeared to the westward of Norway. |
| Moderate Northerly wind, becoming light and variable. | North-westerly; backing to South later on - | Generally light and variable. |
| Fine, but rather hazy - - - - - | Generally fine and clear, but fog and mist in places. | Very fine as a rule. |
| This was a very small system of high pressure which spread over our Islands from the ocean to the north-westward. It became developed after the passage northwards to the Baltic of a small depression which passed over the western portion of the Continent, and which remained within our area till the high pressure had become dispersed. | The centre of this system travelled across France to Germany, and finally disappeared over south-eastern Europe; it was succeeded by a shallow system of low pressure which appeared on our western coasts and spread thence over the whole kingdom. | Although this system was large it was not high; the highest readings were recorded over Scandinavia not long before the system became dispersed. |

## Notes to accompany the Anticyclonic Tables.

April 1st–5th.—During the first portion of this period the highest pressure was over the Peninsula, but it gradually extended itself northwards, and by the 5th readings were very uniform, though not high, over the greater part of western Europe.

April 14th–19th.—During this interval the highest pressures shifted from south-eastern Europe to the Peninsula, while on the 18th a second high-pressure area began to show itself over Scandinavia.

April 29th–May 28th.—During the first part of this period pressure was relatively high both over northern Europe and over the Peninsula, although neither system was very persistent. Eventually the northern system disappeared altogether, and from thence till the end of the interval the highest readings continued over the Peninsula and the Mediterranean.

June 9th–18th.—The highest readings continued throughout this period over the Peninsula and the south of Europe.

# SECTION III.

## REMARKS FOR APRIL, 1878.

(*Tables A. to C., April, with Monthly Wind and Weather Charts.*)

*Wind.*—During the opening days of the month the winds over the British Isles were influenced by an area of low pressure lying to the northward of Great Britain, and were therefore moderate to fresh from the Westward over England and Ireland, while they drew into North over Scotland. On the 4th, however, they fell very light and continued so till the close of the 6th, by which time an anticyclonic circulation had become developed and a South-easterly breeze had set in. During the next two or three days the wind was occasionally very strong, especially in the south-west of England and Ireland, but on the 9th it backed very generally to the Eastward, and continued to blow from that quarter with moderate force till the 12th. Another change to the Southward then took place, and till the close of the 15th a Southerly wind blew over England and Ireland, while in Scotland it veered still more and blew from the Westward. A day or two of light airs and calms ensued, and these were followed on the 18th by a light breeze from between South-west and South-east. At the close of the 20th the wind backed again to the Eastward over Scotland and the north of England, and a little later the movement extended to the remainder of the kingdom, and Easterly winds became general for a few days; they then backed still more, and by the close of the 25th the prevailing direction had become Northerly. On the 28th light airs, mostly from the Eastward, and calms prevailed over Great Britain, and a light to moderate South-easterly breeze over Ireland; and the latter, gradually spreading over the whole kingdom, continued to be the prevailing wind throughout the remainder of the month.

Dealing now with the most prevalent winds for the whole month as shown on the Monthly Wind Chart, it will be seen that nearly everywhere the largest percentages were from Easterly points,—South-east to North-east; and that at many stations, especially those in the west, the percentage of Westerly wind was extremely small.

*Pressure.*—At every observatory except Valencia the lowest barometer reading for the month was observed on the 1st, in connection with a deep depression which crossed over Scotland on that day; the lowest minimum was recorded at Aberdeen where the mercury fell to 28·714 inches, while at Falmouth it did not fall below 29·22 inches. The maxima were nowhere very high, and were most generally recorded on the 27th, when the centre of an anticyclone lay over the United Kingdom; the highest reading was, however, recorded at Aberdeen on the 11th, when under the influence of a large anticyclone which lay over Scandinavia the barometer rose to 30·316 inches. The range of pressure thus exceeded 1·6 inches in the north of Scotland, while in the south-west of England it did not exceed an inch. Its mean height for the month was below the average, and its distribution abnormal, the mean isobars lying nearly north and south; the lowest mean value was 29·732 ins. at Valencia, and the highest 29·905 ins. at Sumburgh Head.

*Movements of the Depressions.*—With the exception of a rather deep depression which passed in an easterly direction across Scotland on the 1st, no very important disturbances were experienced during the month. One system skirted our western coasts as it travelled northwards, and another passed south-eastwards from the south-west of Ireland to the Bay of Biscay. The remainder travelled in an easterly direction, one passing across France, and another over England to the North Sea. Anticyclonic systems were observed over north-western Europe from the 6th to the 13th, and again during the latter part of the month, when for two or three days the centre lay over the British Isles.

*Temperature.*—Both in amount and distribution the mean temperature of the month was nearly normal, being highest in the south-west, and lowest along the whole of our eastern littoral. The minimum temperatures were generally registered on the 1st, but at a few stations in the north-east slightly lower readings were obtained on the 6th; the occurrence of the maxima was somewhat more irregular, being recorded at a good many stations near the middle of the month, but at a larger number not till near its close. Over the English Midlands and the Eastern Counties the minima were exceptionally low, but the maxima were nowhere remarkable. The largest range of temperature recorded was 50°·7 at Audley End.

*Vapour Tension.*—The mean values ranged from about three-tenths of an inch in the south-west to a little over two-tenths in the north, but over the whole of Scotland and the greater part of England they were fairly uniform. The distribution of *Relative Humidity* was somewhat irregular, but may be generalized as highest at the coast stations and lowest over central England.

*Rainfall.*—The fall of rain was above the average over southern England, but below it in the north of Scotland; elsewhere it was nearly normal. The excess in the first-named of these districts was largely due to the very heavy falls which occurred about the 10th, when 2 inches fell in a day at Chigwell Row, and 1·7 inches at London and Hastings.

TABLE A.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of APRIL 1878, together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE In the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation = 100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia - - | 29·733 | 29·270 | 19th, 5 p.m. | 30·192 | 26th, Midt. | 0·922 | 50·1 | 35·6 | 1st, 6 a.m. | 63·4 | 25th, 5 p.m. | 27·8 | ·299 | 83 | 3·821 |
| Armagh - - | 29·807 | 29·143 | 1st, 2 p.m.<br>5 p.m. | 30·247 | 27th, 1 a.m.<br>7 a.m. | 1·104 | 47·6 | 30·3 | 1st, 2 a.m. | 60·4 | 15th, ? | 30·1 | ·265 | 81 | 1·260 |
| Glasgow - - | 29·839 | 28·882 | 1st, 4 p.m. | 30·254 | 26th, Midt.<br>27th, 8 a.m.<br>9 a.m. | 1·372 | 46·3 | 30·5 | 5th, 6 a.m. | 63·9 | 29th, 4 p.m. | 33·4 | ·245 | 78 | 2·801 |
| Aberdeen - | 29·898 | 28·714 | 1st, 5 a.m. | 30·346 | 11th, Midt. | 1·632 | 45·0 | 29·9 | 1st, 6 a.m.<br>2nd, 4 a.m. | 61·6 | 16th, 2 p.m. | 31·7 | ·242 | 87 | 1·025 |
| Falmouth - | 29·802 | 29·226 | 1st, 1 a.m. | 30·221 | 27th, 1 p.m. | 0·995 | 48·7 | 37·2 | 6th, 6 a.m. | 60·4 | 25th, 3 p.m. | 23·2 | ·296 | 86 | 4·105 |
| Stonyhurst - | 29·839 | 29·033 | 1st, 3 p.m. | 30·244 | 27th, 7 a.m. | 1·211 | 46·8 | 31·0 | 5th, 3 a.m. | 63·0 | 29th, 3 p.m. | 32·0 | ·248 | 78 | 1·592 |
| Kew - - | 29·838 | 29·130 | 1st, 5 a.m. | 30·234 | 27th, 9 p.m. | 1·095 | 48·4 | 29·0 | 1st, 6 a.m. | 64·6 | 30th, 1 p.m. | 35·6 | ·266 | 79 | 3·978 |

TABLE B., APRIL.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Means of | | | Absolute Extremes. | | | |
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| **0.** SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·883 | 45·3 | 42·3 | 43·8 | 39·4 | 49·2 | 44·3 | 28·8 | 1st | 57·0 | 16th |
| **1.** SCOTLAND, E. | Glenalmond | 29·885 | 43·5 | 41·4 | 42·5 | 36·7 | 51·7 | 44·2 | 26·5 | 6th | 59·0 | 15th |
| **2.** ENGLAND, N.E. | Seaham | 29·861 | 46·6 | 43·4 | 45·0 | 39·1 | 51·2 | 45·2 | 30·0 | 1st | 66·8 | 14th |
| | Durham* | 29·862 | 48·4 | 42·1 | 45·3 | 37·8 | 54·3 | 46·1 | 26·9 | 6th | 64·9 | 14th |
| | Hull | 29·874 | 48·5 | 45·6 | 47·1 | 39·7 | 55·1 | 47·4 | 26·0 | 1st | 65·5 | 28th |
| | Kelstern 𝕸 | 29·869 | 47·5 | 42·6 | 45·1 | 38·4 | 54·0 | 46·2 | 20·0 | 1st | 62·7 | 15th |
| **3.** ENGLAND, E. | Hillington 𝕸 | 29·855 | 50·1 | 44·6 | 47·4 | 39·0 | 57·9 | 48·5 | 21·1 | 1st | 65·6 | 12th |
| | Audley End 𝕸 | 29·840 | 48·8 | 45·0 | 46·9 | 38·8 | 57·3 | 48·1 | 17·2 | 1st | 67·9 | 30th |
| | Chigwell Row | 29·877 | 48·6 | 46·3 | 47·5 | 40·7 | 55·5 | 48·1 | 25·5 | 1st | 65·0 | 30th |
| **4.** MIDLAND COUNTIES. | Wakefield 𝕸 | 29·863 | 47·0 | 45·8 | 46·4 | 38·8 | 56·1 | 47·5 | 27·2 | 7th | 65·8 | 14th |
| | Buxton 𝕸 | 29·865 | 46·5 | 42·8 | 44·7 | 37·2 | 52·5 | 44·9 | 28·4 | 1st | 60·1 | 14th |
| | Cheadle 𝕸 | 29·840 | 45·9 | 44·6 | 45·2 | 38·5 | 54·1 | 46·3 | 24·9 | 1st | 63·8 | 29th |
| | Leicester | 29·848 | 47·8 | 47·3 | 47·6 | 40·3 | 56·1 | 48·2 | 27·2 | 1st | 64·0 | 29th |
| | Uppingham | 29·849 | 46·5 | 44·3 | 45·4 | 38·1 | 56·5 | 47·3 | 24·7 | 1st | 66·2 | 29th |
| | Oscott | 29·842 | 47·0 | 45·8 | 46·4 | 39·6 | 56·2 | 47·9 | 26·5 | 1st | 64·1 | 28th |
| | Churchstoke 𝕸 | 29·864 | 47·2 | 45·7 | 46·5 | 38·6 | 55·1 | 46·9 | 24·2 | 1st | 62·5 | 30th |
| | Hereford 𝕸 | 29·827 | 47·9 | 46·6 | 47·3 | 39·7 | 56·6 | 48·2 | 26·2 | 1st | 63·7 | 30th |
| **5.** ENGLAND, S. | Marlborough 𝕸 | 29·847 | 47·7 | 45·6 | 46·7 | 39·4 | 56·4 | 47·9 | 25·8 | 1st | 65·0 | 30th |
| | Strathfield Turgiss 𝕸 | 29·845 | 50·1 | 46·2 | 48·2 | 39·4 | 57·9 | 48·7 | 27·0 | 6th | 65·6 | 28th |
| | Ramsgate 𝕸 | 29·871 | 48·0 | 45·5 | 46·8 | 41·7 | 53·3 | 47·5 | 29·7 | 1st | 65·2 | 30th |
| | Folkestone | 29·849 | 47·4 | 45·9 | 46·7 | 41·1 | 53·8 | 47·5 | 27·9 | 1st | 60·4 | 27th |
| | Southampton† | 29·838 | 50·8 | 47·3 | 49·1 | 42·1 | 55·8 | 49·0 | 30·4 | 1st | 62·3 | 26th |
| | Hastings | 29·851 | 48·3 | 46·2 | 47·3 | 42·0 | 54·1 | 48·1 | 27·1 | 1st | 60·6 | 27th |
| **6.** SCOTLAND, W. | —— | — | — | — | — | — | — | — | — | — | — | — |
| **7.** ENGLAND, N.W. | Douglas | 29·814 | 46·4 | 44·2 | 45·3 | 39·1 | 51·5 | 45·3 | 28·2 | 6th | 59·1 | 24th |
| | Prestwich | 29·833 | 47·9 | 45·7 | 46·8 | 40·0 | 54·8 | 47·4 | 29·2 | 1st | 65·0 | 29th |
| | Llandudno 𝕸 | 29·821 | 50·6 | 47·7 | 49·2 | 42·7 | 57·5 | 50·1 | 34·0 | 1st | 70·7 | 12th |
| **8.** ENGLAND, S.W. | Caermarthen 𝕸 | 29·801 | 51·0 | 46·8 | 48·9 | 41·1 | 57·8 | 49·5 | 27·9 | 1st | 63·9 | 25th |
| | Dartmoor 𝕸 | 29·812 | 44·0 | 42·1 | 43·1 | 38·3 | 48·3 | 43·3 | 27·6 | 1st | 57·0 | 26th |
| | Babbacombe 𝕸 | 29·817 | 48·1 | 46·0 | 47·1 | 42·7 | 53·4 | 48·1 | 31·6 | 2nd | 59·3 | 30th |
| **9.** IRELAND, N. | Markree Castle | 29·770 | 48·8 | 46·5 | 47·7 | 39·8 | 55·5 | 47·7 | 28·4 | 1st | 63·4 | 24th |
| **10.** IRELAND, S. | Dublin | 29·810 | 49·0 | 47·7 | 48·4 | 43·2 | 54·5 | 48·9 | 29·9 | 1st | 63·1 | 13th |
| | Parsonstown | 29·784 | 49·6 | 46·1 | 47·9 | 39·4 | 56·7 | 48·1 | 25·7 | 1st | 63·4 | 13th |
| **CHANNEL** | Jersey (St. Aubin's) | 29·859 | 50·9 | 48·8 | 49·9 | 44·9 | 55·8 | 50·4 | 37·8 | 4th | 63·1 | 30th |

NOTE.—The stations marked thus 𝕸 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of APRIL 1878, corrected for Diurnal Range.

Latitude, beginning in each case with the Station lying furthest North.)

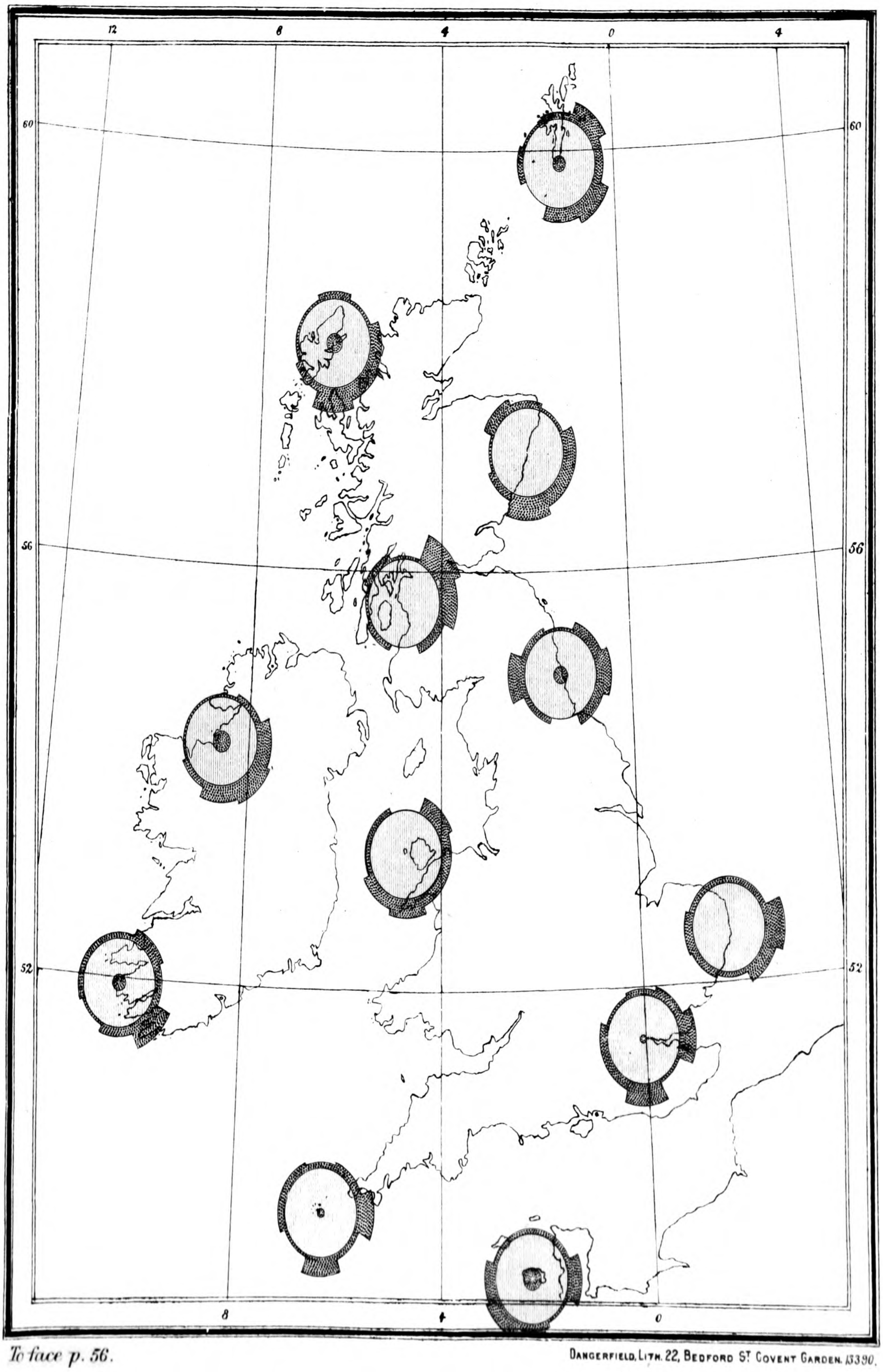
| TENSION OF VAPOUR. | | | RELATIVE HUMIDITY. | | | AMOUNT OF CLOUD (0 to 10). | | | RAINFALL. | | | WEATHER, No. of Days of | | | | | | | WIND, No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·259 | ·244 | ·252 | 86 | 91 | 89 | 4·7 | 5·2 | 5·0 | 0·240 | ·090 | 15th | 6 | 0 | 0 | 0 | 10 | 9 | 1 | 2 | 4 | 4 | 28 | 6 | 4 | 5 | 0 | 7 |
| ·247 | ·241 | ·244 | 87 | 91 | 89 | 8·1 | 7·1 | 7·6 | 2·458 | ·840 | 20th | 14 | 2 | 1 | 0 | 2 | 18 | 0 | 1 | 8 | 20 | 10 | 2 | 4 | 2 | 2 | 11 |
| ·271 | ·262 | ·267 | 86 | 93 | 90 | 5·9 | 6·6 | 6·3 | 2·418 | ·805 | 16th | 13 | 1 | 0 | 0 | 4 | 11 | 0 | 6 | 3 | 9 | 11 | 4 | 4 | 6 | 1 | 16 |
| ·270 | ·251 | ·261 | 79 | 92 | 86 | 6·3 | 7·0 | 6·7 | 2·573 | ·863 | 20th | 14 | 2 | 1 | 0 | 3 | 14 | 0 | 3 | 16 | 10 | 5 | 11 | 4 | 4 | 5 | 2 |
| ·287 | ·268 | ·278 | 84 | 87 | 86 | 5·7 | 4·5 | 5·1 | 1·260 | ·410 | 20th | 10 | 0 | 0 | 0 | 7 | 8 | 0 | 1 | 12 | 6 | 22 | 1 | 4 | 5 | 6 | 3 |
| ·300 | ·270 | ·285 | 91 | 98 | 94 | 6·2 | 4·5 | 5·4 | 1·131 | ·502 | 20th | 12 | 0 | 0 | 0 | 7 | 8 | 0 | 1 | 9 | 15 | 12 | 7 | 4 | 8 | 0 | 4 |
| ·295 | ·264 | ·280 | 80 | 88 | 84 | 6·5 | 5·9 | 6·2 | 1·047 | ·412 | 3rd | 11 | 1 | 1 | 1 | 4 | 10 | 0 | 1 | 7 | 9 | 16 | 5 | 15 | 4 | 3 | 0 |
| ·288 | ·270 | ·279 | 83 | 89 | 86 | 6·5 | 3·9 | 5·2 | 1·680 | ·500 | 20th | 12 | 3 | 0 | 1 | 5 | 7 | 0 | 1 | 8 | 7 | 16 | 1 | 7 | 5 | 7 | 8 |
| ·282 | ·263 | ·273 | 83 | 85 | 84 | 7·0 | 5·2 | 6·1 | 3·600 | 2·020 | 10th | 12 | 1 | 0 | 2 | 5 | 10 | 1 | 6 | 3 | 12 | 13 | 5 | 11 | 9 | 1 | 0 |
| ·264 | ·273 | ·269 | 82 | 88 | 85 | 7·2 | 5·5 | 6·4 | 1·920 | 1·100 | 20th | 12 | 1 | 0 | 0 | 3 | 9 | 0 | 3 | 5 | 13 | 4 | 1 | 3 | 8 | 2 | 21 |
| ·262 | ·246 | ·254 | 83 | 88 | 85 | 6·1 | 6·2 | 6·2 | 2·340 | ·500 | 20th | 12 | 3 | 0 | 0 | 4 | 6 | 0 | 2 | 3 | 10 | 14 | 4 | 10 | 8 | 7 | 2 |
| ·244 | ·250 | ·247 | 79 | 85 | 82 | 5·9 | 4·1 | 5·0 | 2·200 | ·450 | 19th | 14 | 1 | 2 | 0 | 7 | 6 | 6 | 3 | 7 | 15 | 14 | 6 | 6 | 4 | 5 | 0 |
| ·258 | ·268 | ·263 | 78 | 83 | 81 | 7·1 | 4·3 | 5·7 | 1·570 | ·470 | 20th | 14 | 0 | 0 | 0 | 4 | 9 | 0 | 0 | 15 | 11 | 7 | 5 | 14 | 4 | 0 | 4 |
| ·270 | ·259 | ·265 | 84 | 87 | 86 | 7·3 | 5·2 | 6·3 | 2·303 | ·788 | 20th | 14 | 4 | 0 | 0 | 4 | 9 | 0 | 0 | 7 | 9 | 12 | 8 | 2 | 8 | 3 | 11 |
| ·266 | ·271 | ·269 | 82 | 86 | 84 | 7·9 | 4·4 | 6·2 | 1·950 | ·410 | 20th | 14 | 1 | 1 | 1 | 4 | 11 | 1 | 3 | 14 | 12 | 7 | 8 | 7 | 4 | 2 | 3 |
| ·260 | ·254 | ·257 | 79 | 81 | 80 | 5·8 | 4·2 | 5·0 | 1·340 | ·197 | 19th | 20 | 2 | 0 | 0 | 3 | 1 | 1 | 3 | 8 | 9 | 13 | 4 | 3 | 6 | 7 | 7 |
| ·273 | ·268 | ·271 | 81 | 83 | 82 | 6·7 | 3·5 | 5·1 | 2·318 | ·757 | 10th | 21 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 6 | 11 | 4 | 1 | 2 | 5 | 2 | 29 |
| ·278 | ·273 | ·276 | 83 | 83 | 85 | 6·8 | 4·2 | 5·5 | 2·586 | ·581 | 10th | 15 | 2 | 1 | 0 | 6 | 10 | 0 | 0 | 2 | 19 | 3 | 6 | 5 | 13 | 1 | 11 |
| ·286 | ·278 | ·282 | 78 | 88 | 83 | 6·6 | 4·5 | 5·6 | 2·353 | ·667 | 10th | 16 | 0 | 2 | 0 | 5 | 8 | 0 | 3 | 8 | 11 | 3 | 5 | 15 | 7 | 3 | 5 |
| ·283 | ·273 | ·278 | 83 | 89 | 86 | 6·2 | 4·5 | 5·4 | 1·886 | ·323 | 23rd | 16 | 1 | 1 | 2 | 5 | 6 | 1 | 5 | 21 | 4 | 2 | 5 | 12 | 2 | 4 | 5 |
| ·289 | ·274 | ·282 | 88 | 88 | 88 | 6·2 | 5·2 | 5·7 | 1·730 | ·230 | 3rd | 16 | 1 | 2 | 1 | 6 | 8 | 1 | 8 | 6 | 19 | 4 | 3 | 11 | 6 | 1 | 2 |
| ·271 | ·274 | ·273 | 73 | 83 | 78 | 7·0 | 5·1 | 6·1 | 3·049 | ·955 | 17th | 18 | 0 | 0 | 1 | 7 | 14 | 1 | 0 | 12 | 7 | 14 | 1 | 17 | 2 | 6 | 1 |
| ·282 | ·275 | ·279 | 82 | 87 | 85 | 5·5 | 5·6 | 5·6 | 4·015 | 1·680 | 10th | 18 | 2 | 0 | 0 | 8 | 11 | 2 | 5 | 20 | 10 | 4 | 4 | 8 | 7 | 1 | 1 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·281 | ·268 | ·275 | 89 | 91 | 90 | 6·7 | 4·9 | 5·8 | 2·355 | ·498 | 12th | 16 | 2 | 3 | 0 | 4 | 10 | 2 | 0 | 8 | 19 | 6 | 4 | 5 | 3 | 3 | 12 |
| ·258 | ·255 | ·257 | 77 | 83 | 80 | 6·2 | 5·4 | 5·8 | 1·903 | ·515 | 20th | 10 | 1 | 2 | 0 | 5 | 8 | 0 | 4 | 12 | 13 | 7 | 6 | 2 | 5 | 1 | 10 |
| ·288 | ·269 | ·279 | 78 | 81 | 80 | 6·8 | 4·6 | 5·7 | 1·390 | ·255 | 3rd | 12 | 0 | 1 | 0 | 4 | 9 | 2 | 4 | 3 | 14 | 16 | 9 | 3 | 10 | 1 | 0 |
| ·301 | ·290 | ·296 | 80 | 89 | 85 | 6·8 | 5·4 | 6·1 | 3·440 | ·590 | 13th | 18 | 0 | 0 | 1 | 5 | 12 | 0 | 1 | 1 | 17 | 12 | 7 | 3 | 3 | 2 | 14 |
| ·262 | ·253 | ·258 | 90 | 92 | 91 | 7·8 | 6·9 | 7·4 | 6·250 | ·700 | 23rd | 25 | 2 | 0 | 0 | 5 | 19 | 5 | 0 | 3 | 14 | 9 | 9 | 6 | 7 | 6 | 6 |
| ·295 | ·285 | ·290 | 87 | 91 | 89 | 7·2 | 6·3 | 6·8 | 5·030 | 1·100 | 9th | 23 | 0 | 1 | 0 | 7 | 16 | 2 | 4 | 9 | 14 | 1 | 6 | 13 | 10 | 1 | 2 |
| ·279 | ·274 | ·277 | 80 | 85 | 83 | 5·9 | 5·3 | 5·6 | 1·802 | ·400 | 12th | 18 | 0 | 2 | 0 | 7 | 9 | 0 | 2 | 2 | 9 | 16 | 8 | 5 | 2 | 2 | 14 |
| ·277 | ·282 | ·280 | 79 | 84 | 82 | 5·8 | 4·7 | 5·3 | 2·350 | 1·102 | 29th | 16 | 1 | 2 | 0 | 4 | 4 | 0 | 1 | 9 | 7 | 15 | 7 | 6 | 6 | 4 | 5 |
| ·296 | ·283 | ·290 | 83 | 89 | 86 | 6·9 | 5·4 | 6·2 | 1·431 | ·545 | 12th | 18 | 0 | 3 | 0 | 5 | 11 | 0 | 3 | 5 | 7 | 24 | 6 | 4 | 6 | 3 | 2 |
| ·308 | ·305 | ·307 | 82 | 88 | 85 | 7·5 | 5·2 | 6·4 | 3·730 | ·604 | 9th | 22 | 0 | 2 | 1 | 3 | 11 | 0 | 1 | 5 | 10 | 6 | 5 | 11 | 6 | 4 | 12 |

# TABLE C., APRIL.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS during the Month of APRIL 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. | | | | | | | | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. | | | WEATHER, No. of Days of | | | | | | | WIND, No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Means of | | | Absolute Extremes. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | At 8 a.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. | | | | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| **0. SCOTLAND, N.** | Sumburgh Head | 29·905 | 43·5 | 38·9 | 47·7 | 43·3 | 24 | 1st | 53 | 11th | 0·241 | 85 | 6·5 | 0·40 | 0·14 | 1st | 6 | 0 | 0 | 0 | 6 | 11 | 1 | 2 | 7 | 3 | 8 | 5 | 0 | 2 | 1 | 2 |
| | Thurso | 29·850 | 43·8 | 38·4 | 53·1 | 45·8 | 30 | 1st, 3rd | 63 | 16th, 29th | ·259 | 91 | 7·0 | 0·44 | 0·15 | 15th | 12 | 0 | 0 | 0 | 3 | 13 | 1 | 2 | 2 | 2 | 10 | 9 | 1 | 0 | 0 | 4 |
| | Wick | 29·861 | 43·8 | 38·0 | 51·2 | 44·6 | 25 | 2nd | 61 | 14th | ·254 | 89 | 5·5 | 0·49 | 0·17 | 14th | 9 | 0 | 0 | 0 | 12 | 12 | 1 | 2 | 1 | 5 | 8 | 8 | 1 | 1 | 2 | 2 |
| | Stornoway | 29·789 | 46·4 | 39·7 | 50·6 | 45·2 | 28 | 1st | 59 | 29th | ·269 | 86 | 4·9 | 0·93 | 0·20 | 1st, 2nd | 11 | 0 | 0 | 0 | 13 | 11 | 3 | 2 | 1 | 5 | 6 | 9 | 2 | 1 | 1 | 3 |
| **1. SCOTLAND, E.** | Nairn | 29·847 | 44·1 | 38·7 | 54·0 | 46·4 | 27 | 1st | 64 | 29th | ·231 | 79 | 4·3 | 0·37 | 0·28 | 1st | 6 | 1 | 0 | 0 | 16 | 10 | 0 | 0 | 0 | 4 | 4 | 1 | 2 | 0 | 2 | 17 |
| | Aberdeen | 29·867 | 43·1 | 39·6 | 48·9 | 44·3 | 27 | 1st | 64 | 14th | ·248 | 89 | 6·0 | 0·85 | 0·19 | 17th | 16 | 1 | 0 | 0 | 9 | 9 | 0 | 2 | 1 | 5 | 5 | 9 | 2 | 1 | 5 | 0 |
| | Leith | 29·832 | 44·1 | 38·6 | 52·8 | 45·7 | 23 | 6th | 63 | 15th | ·256 | 88 | 7·2 | 1·07 | 0·40 | 1st | 12 | 1 | 0 | 0 | 3 | 15 | 0 | 0 | 5 | 13 | 1 | 0 | 1 | 4 | 3 | 3 |
| **2. ENGLAND, N.E.** | Shields | 29·863 | 43·5 | 39·0 | 49·3 | 44·2 | 28 | 1st | 61 | 14th, 15th | ·251 | 89 | 7·0 | 1·85 | 0·47 | 20th | 13 | 2 | 0 | 0 | 7 | 16 | 3 | 1 | 4 | 7 | 4 | 0 | 2 | 8 | 2 | 2 |
| | Scarborough | 29·866 | 45·6 | 41·1 | 50·1 | 45·6 | 28 | 1st | 64 | 15th | ·271 | 89 | 5·7 | 2·30 | 0·67 | 16th | 9 | 1 | 0 | 0 | 10 | 10 | 0 | 4 | 3 | 5 | 5 | 4 | 4 | 4 | 0 | 1 |
| | York | 29·860 | 44·8 | 38·2 | 56·0 | 47·1 | 28 | 1st | 65 | 14th | ·251 | 85 | 5·4 | 1·18 | 0·50 | 20th | 10 | 0 | 0 | 0 | 12 | 13 | 0 | 6 | 1 | 5 | 2 | 9 | 2 | 4 | 1 | 0 |
| **3. ENGLAND, E.** | Yarmouth | 29·859 | 44·9 | 40·3 | 49·4 | 44·9 | 25 | 1st | 61 | 15th | ·267 | 90 | 4·1 | 1·03 | 0·37 | 16th | 13 | 0 | 0 | 1 | 14 | 3 | 3 | 2 | 2 | 9 | 6 | 2 | 3 | 4 | 2 | 0 |
| | Cambridge | 29·852 | 45·7 | 38·4 | 59·1 | 48·8 | 21 | 1st | 67 | 30th | ·275 | 90 | 7·8 | 1·64 | 0·70 | 20th | 12 | 1 | 0 | 2 | 5 | 19 | 0 | 3 | 3 | 5 | 5 | 5 | 7 | 1 | 1 | 0 |
| **4. MIDLAND COUNTIES.** | Nottingham | 29·858 | 46·3 | 38·4 | 59·3 | 48·9 | 24 | 1st, 6th | 69 | 29th | ·259 | 83 | 6·3 | 1·55 | 0·68 | 20th | 14 | 1 | 0 | 2 | 10 | 16 | 1 | 3 | 4 | 2 | 6 | 5 | 4 | 1 | 0 | 5 |
| | Oxford | 29·839 | 45·5 | 40·7 | 55·9 | 48·3 | 28 | 1st | 66 | 30th | ·261 | 86 | 7·1 | 2·17 | 0·74 | 10th | 12 | 1 | 1 | 0 | 7 | 18 | 0 | 0 | 7 | 5 | 2 | 2 | 2 | 3 | 0 | 9 |
| **5. ENGLAND, S.** | London | 29·840 | 47·0 | 41·1 | 58·2 | 49·7 | 29 | 1st, 6th | 68 | 30th | ·273 | 85 | 6·5 | 4·64 | 1·70 | 10th | 17 | 2 | 1 | 2 | 7 | 14 | 1 | 2 | 3 | 8 | 1 | 8 | 3 | 3 | 1 | 1 |
| | Dover | 29·839 | 47·4 | 42·6 | 52·1 | 47·4 | 30 | 1st | 57 | 15th, 23rd, 30th. | ·270 | 83 | 3·9 | 1·30 | 0·24 | 23rd | 15 | 1 | 0 | 0 | 12 | 2 | 0 | 5 | 2 | 9 | 1 | 3 | 5 | 4 | 1 | 0 |
| | Hurst Castle | 29·810 | 47·5 | 42·5 | 54·5 | 48·5 | 31 | 1st, 6th | 61 | 25th | ·294 | 90 | 6·1 | 2·36 | 0·45 | 10th | 16 | 1 | 0 | 0 | 9 | 14 | 3 | 2 | 2 | 10 | 2 | 2 | 5 | 4 | 3 | 0 |
| **6. SCOTLAND, W.** | Ardrossan | 29·815 | 46·2 | 42·4 | 55·5 | 49·0 | 33 | 5th | 63 | 11th, 29th | ·246 | 79 | 6·9 | 3·42 | 1·43 | 20th | 15 | 0 | 0 | 0 | 6 | 14 | 1 | 1 | 13 | 8 | 3 | 0 | 2 | 1 | 2 | 0 |
| **7. ENGLAND, N.W.** | Liverpool | 29·819 | 46·9 | 42·1 | 56·0 | 49·1 | 33 | 1st, 6th | 65 | 29th | ·258 | 81 | 6·1 | 1·12 | 0·23 | 16th | 12 | 0 | 0 | 0 | 7 | 11 | 0 | 0 | 5 | 8 | 9 | 2 | 2 | 3 | 0 | 1 |
| | Holyhead | 29·803 | 47·7 | 44·1 | 54·9 | 49·5 | 36 | 1st | 66 | 29th | ·280 | 85 | 5·7 | 1·51 | 0·44 | 12th | 13 | 0 | 1 | 0 | 8 | 8 | 0 | 0 | 6 | 4 | 4 | 7 | 5 | 2 | 2 | 0 |
| **8. ENGLAND, S.W.** | Pembroke | 29·779 | 46·5 | 43·5 | 51·9 | 47·7 | 34 | 1st | 59 | 25th | ·272 | 86 | 6·1 | 2·37 | 0·62 | 12th | 19 | 0 | 0 | 0 | 10 | 16 | 3 | 2 | 4 | 6 | 6 | 5 | 1 | 3 | 3 | 0 |
| | Portishead | 29·811 | 46·2 | 40·3 | 57·6 | 49·0 | 28 | 1st | 68 | 28th | ·283 | 91 | 7·1 | 3·51 | 0·76 | 10th | 18 | 0 | 0 | 0 | 7 | 17 | 4 | 3 | 8 | 2 | 4 | 2 | 8 | 3 | 0 | 0 |
| | Plymouth | 29·792 | 47·8 | 43·5 | 54·9 | 49·2 | 31 | 4th | 64 | 25th | ·295 | 89 | 6·4 | 4·08 | 0·57 | 30th | 22 | 0 | 0 | 0 | 8 | 17 | 5 | 2 | 5 | 7 | 3 | 1 | 3 | 1 | 1 | 7 |
| **9. IRELAND, N.** | Greencastle | 29·775 | 47·1 | 41·4 | 55·8 | 48·6 | 32 | 1st, 3rd, 4th, 5th. | 63 | 28th | ·274 | 85 | 6·1 | 3·07 | 0·86 | 12th | 12 | 1 | 1 | 0 | 11 | 15 | 0 | 1 | 2 | 7 | 4 | 9 | 5 | 0 | 2 | 0 |
| | Donaghadee | 29·808 | 45·7 | 42·0 | 52·3 | 47·2 | 31 | 1st | 57 | 15th | ·277 | 91 | 4·5 | 1·67 | 0·54 | 12th | 13 | 0 | 0 | 0 | 13 | 6 | 4 | 2 | 4 | 4 | 8 | 4 | 4 | 3 | 1 | 0 |
| **10. IRELAND, S.** | Kingstown | 29·799 | 46·6 | 43·8 | 52·1 | 48·0 | 32 | 1st | 59 | 15th | ·271 | 86 | 5·4 | 1·78 | 0·76 | 29th | 19 | 1 | 1 | 0 | 10 | 9 | 1 | 0 | 4 | 3 | 12 | 3 | 0 | 3 | 3 | 2 |
| | Valencia | 29·732 | 49·4 | 44·6 | 55·3 | 50·0 | 34 | 1st | 62 | 25th | ·293 | 84 | 6·4 | 3·65 | 1·15 | 12th | 19 | 0 | 1 | 0 | 5 | 10 | 5 | 2 | 5 | 3 | 10 | 3 | 1 | 2 | 2 | 2 |
| | Roche's Point | 29·766 | 47·3 | 43·7 | 54·6 | 49·2 | 33 | 1st | 62 | 30th | ·283 | 88 | 5·7 | 4·69 | 0·96 | 12th | 19 | 1 | 2 | 0 | 10 | 12 | 1 | 6 | 3 | 3 | 7 | 5 | 2 | 3 | 1 | 0 |
| **CHANNEL ISLANDS** | Scilly | 29·772 | 50·1 | 46·9 | 53·2 | 50·1 | 40 | 1st, 7th | 58 | 30th | ·328 | 91 | 7·8 | 3·76 | 0·86 | 12th | 22 | 0 | 0 | 0 | 2 | 17 | 3 | 2 | 3 | 8 | 2 | 7 | 1 | 3 | 3 | 1 |
| | Jersey | 29·791 | 48·7 | 45·1 | 54·7 | 49·9 | 38 | 1st | 63 | 28th | ·306 | 89 | 7·4 | 3·97 | 0·67 | 9th | 19 | 0 | 1 | 1 | 4 | 16 | 2 | 2 | 2 | 6 | 1 | 2 | 6 | 5 | 2 | 4 |

MONTHLY WIND CHART FOR APRIL, 1878.

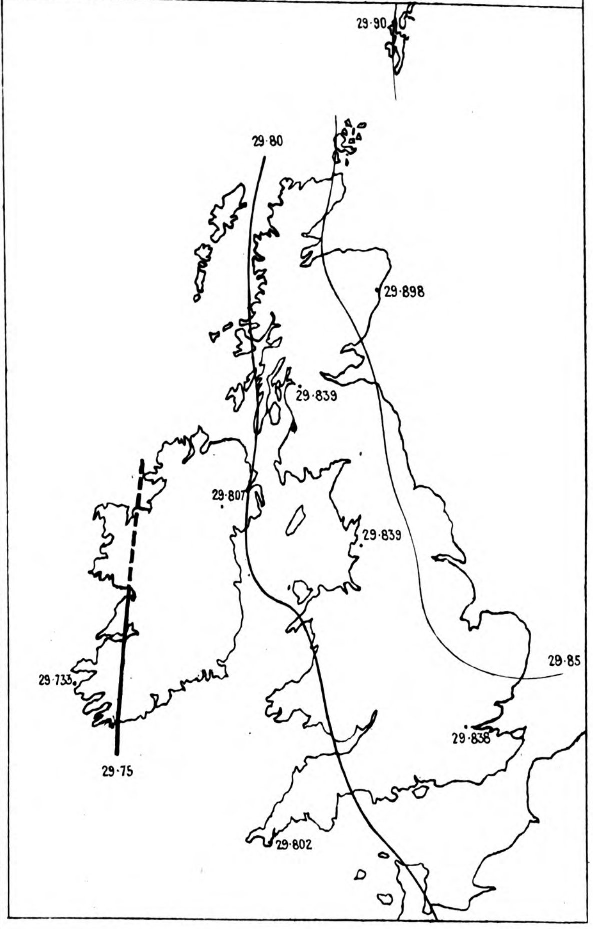

12
8
4
0
4
60
60
56
56
52
52
8
4
0

To face p. 56.

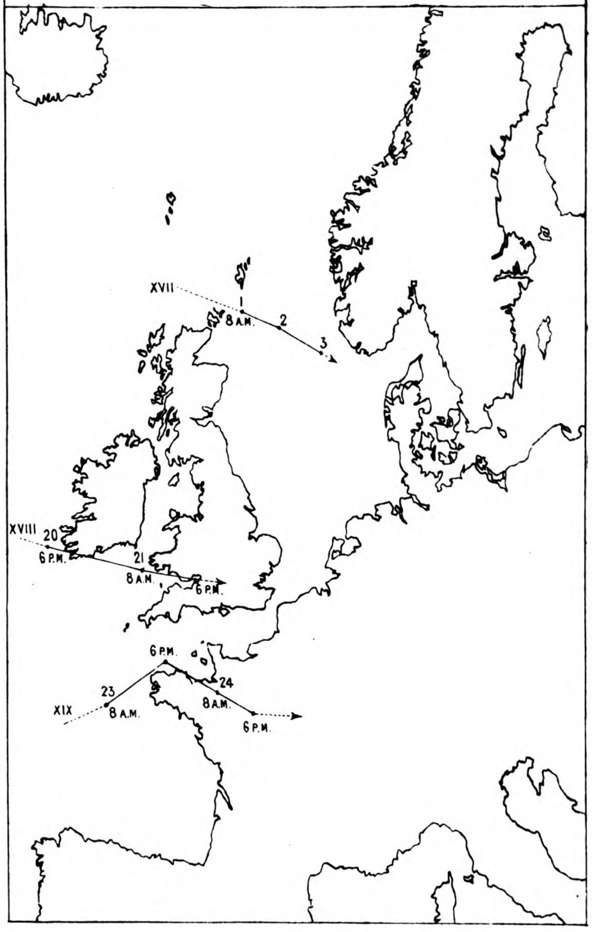
DANGERFIELD, LITH. 22, BEDFORD ST. COVENT GARDEN. 13390.

# MONTHLY WEATHER CHART. APRIL, 1878.

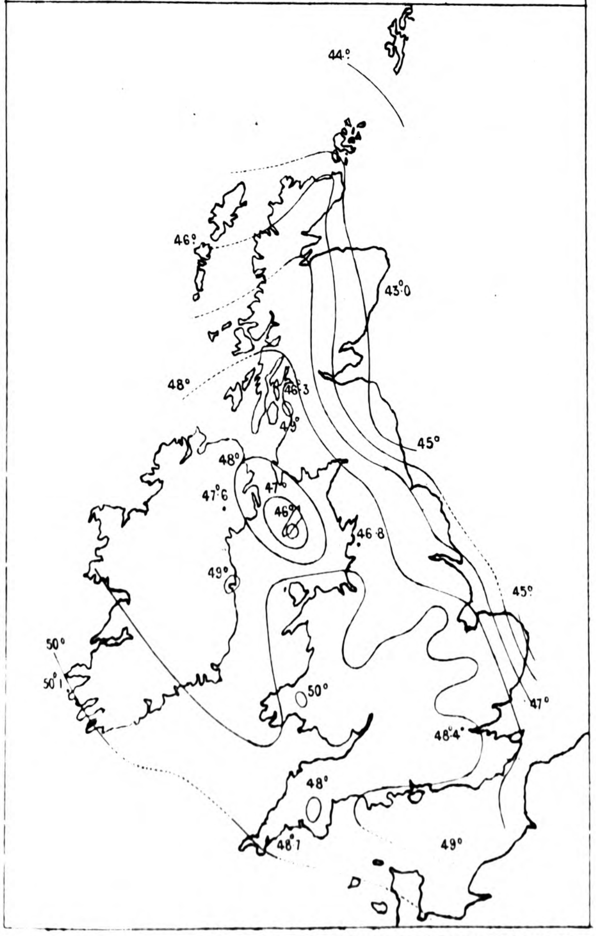
## 1. DISTRIBUTION OF MEAN PRESSURE


29·90
29·80
29·898
29·839
29·807
29·839
29·85
29·733
29·838
29·75
29·802

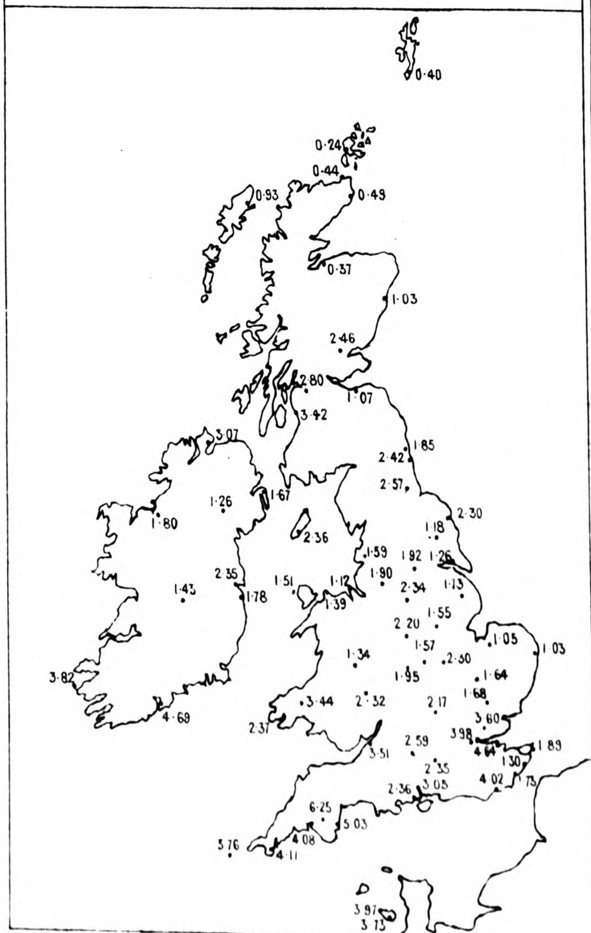
## 2. MOVEMENTS OF DEPRESSIONS.


XVII
1
8 A.M.
2
3
XVIII
20
6 P.M.
21
8 A.M.
6 P.M.
6 P.M.
23
24
XIX
8 A.M.
8 A.M.
6 P.M.

## 3. DISTRIBUTION OF MEAN TEMPERATURE


44°
46°
43°0
48°
46·3
49°
45°
48°
47°6
47°
46°
46·8
49°
45°
50°
50°1
50°
47°
48°4
48°
48°7
49°

## 4. RAINFALL


0·40
0·24
0·44
0·93
0·49
0·37
1·03
2·46
2·80
1·07
3·42
3·07
1·85
2·42
2·57
1·26
1·67
1·80
2·30
1·18
2·36
1·59
1·92
1·26
2·35
1·51
1·12
1·90
2·34
1·13
1·43
1·78
1·39
1·55
2·20
1·05
1·57
1·03
1·34
2·30
1·95
1·64
3·82
1·68
3·44
2·32
2·17
4·69
3·60
2·37
3·98
2·59
4·64
1·89
3·51
1·30
2·35
4·02
2·36
3·03
·73
6·25
5·03
4·08
3·76
4·11
3·97
3·73

*To follow Wind Chart for April.*

Dangerfield, Lith 22, Bedford St. Covent Garden. 13389. 12/86

## Remarks for May 1878.

(*Tables A. to C., May, with Monthly Wind and Weather Charts.*)

*Wind.*—The month began with light variable airs which after a few hours developed into a moderate to fresh South-westerly breeze, and later on veered to West, from which quarter it continued to blow till the 5th. The wind then backed, and, freshening a little at some of the south-western stations, blew from between South and East till the close of the following day, when it again became light and somewhat variable in direction. On the 8th the prevailing wind was again Easterly, and for two or three days the direction varied between South and East, occasionally blowing freshly at some of the more exposed stations in the west. On the morning of the 12th a moderate Southerly current was experienced which at some stations increased a good deal in strength during the day, and for some time moderate to strong winds from this quarter, but occasionally veering temporarily to South-west or West, prevailed over the whole kingdom. On the 19th, however, a more permanent change took place, and the wind veered to West over England and Ireland and to North over Scotland, and in places blew very strongly. A Southerly wind again appeared in the south-west on the 22nd, and soon extended to the remainder of the kingdom, after which the wind circulated round the centre of a depression which lay over central England on the 23rd, and was therefore Easterly over Scotland, while it was fresh or strong from the westward in the Channel. By the morning of the 25th North-west had become the prevailing direction, from which point it backed to West, and on the 27th to South, and fell very light. After a short interval the wind shifted to the Northward again, and during the remainder of the month this was the most general direction, although at times it veered for a few hours to the Eastward and occasionally died away to a calm. By reference to the monthy chart it will be seen that upon the whole there was no marked predominence of winds from any one quarter, but that, speaking generally, the wind blew with nearly equal frequency from all points of the compass.

*Pressure.*—The mean pressure for the month ranged from 29·8 inches along the Channel and the south-east of England to 29·65 inches on our north-western coasts, and was therefore generally below the average. The barometer reached its lowest point on the 15th during the passage of a depression along our north-western coasts, but nowhere did it fall so low as 29 inches; while the maximum readings, which occurred at the close of the month, in no case reached 30·3 inches. The range of pressure was therefore small; at Armagh, where it was greatest, it was less than an inch and a quarter, and over the greater part of the kingdom it did not amount to an inch.

*Movements of the Depressions.*—No very important depressions were experienced during the month. On the 23rd a rather deep centre crossed over central England and passed slowly on to the Continent, but most of the disturbances which affected our Islands passed in a northerly direction outside our western coasts.

*Temperature.*—As in the preceding month, the distribution of mean temperature was nearly normal, ranging from about 55° in the south-west of England to 50° in the north of Scotland and to 47° in the Shetlands. The minima were as low as 32° in the north of Scotland, but at many of the southern and south-western stations the temperature did not fall below 40°, while at only a few stations did the maxima rise to 70°; the range of temperature was therefore, as a rule, small. The lowest readings were most generally recorded on the 21st, but the occurrence of the maxima was more irregular, and while at some stations it was recorded early in the month, at others it was not reached until its close.

*Vapour Tension.*—This was greatest along the Channel coasts and least in the extreme north of the kingdom, the mean values varying from ·36 inch in the former region to ·28 inch in the latter. The distribution of the mean values of *Relative Humidity* was somewhat similar, except that in the south-west of Ireland they were even lower than in Scotland.

*Rainfall.*—While the rainfall differed but little from the average over the northern portion of the United Kingdom, it was considerably in excess of it everywere else; and this excess was due to a continuance of wet, unsettled weather rather than to a few exceptionally heavy falls. At Dartmoor 2·17 inches fell on the 16th, and upwards of an inch fell in 24 hours at a few other stations, but as a rule the daily falls were not unusually large.

TABLE A.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of MAY 1878; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE in the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation=100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia | 29·677 | 29·040 | 15th, 4 a.m. | 30·228 | 29th, 9 p.m. | 1·188 | 53·3 | 43·9 | 8th, 5 a.m. | 63·8 | 30th, 3 p.m. | 19·9 | ·323 | 79 | 6·368 |
| *Armagh | 29·704* | 29·041 | 15th, 11 a.m. | 30·269 | 29th, 11 p.m. | 1·228 | 51·2* | 40·0 | 21st, 2 a.m. | 63·0 | 18th, 2 p.m. | 23·0 | ·314 | 83 | 3·960 |
| Glasgow | 29·698 | 29·117 | 15th, 3 p.m.<br>4 p.m. | 30·171 | 29th, 10 p.m. | 1·054 | 50·9 | 36·5 | 21st, 7 a.m. | 66·4 | 5th, 4 p.m. | 29·9 | ·284 | 77 | 3·452 |
| Aberdeen | 29·726 | 29·190 | 15th, 7 p.m. | 30·178 | 29th, 10 p.m. | 0·988 | 48·5 | 36·0 | 20th, 7 a.m. | 63·4 | 5th, 11 a.m. | 27·4 | ·272 | 80 | 2·550 |
| Falmouth | 29·787 | 29·239 | 15th, 8 a.m. | 30·181 | 4th, 11 a.m. | 0·942 | 53·5 | 43·8 | 21st, 4 a.m. | 60·7 | 17th, 11 a.m.,<br>1 p.m. | 16·9 | ·343 | 84 | 5·570 |
| Stonyhurst | 29·738 | 29·221 | 15th, 1 p.m. | 30·205 | 29th, Midt. | 0·984 | 51·9 | 37·1 | 21st, 3 a.m. | 66·0 | 5th, 4 p.m.<br>12th, 3 p.m. | 28·9 | ·303 | 79 | 4·703 |
| Kew | 29·794 | 29·292 | 24th, 2 p.m.<br>4 p.m. | 30·166 | 30th, 10 a.m. | 0·874 | 55·0 | 39·1 | 21st, 4 a.m. | 71·2 | 10th, 3 p.m. | 32·1 | ·347 | 80 | 4·010 |

* Mean for one day is approximate.

TABLE B., May.—Giving a Summary of the Meteorological Observations made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of Latitude,

| Names of Districts. | Names of Stations. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | Air Temperature. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Means of | | | Absolute Extremes. | | | |
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| **0.** SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·695 | 49·6 | 46·3 | 48·0 | 43·4 | 53·7 | 48·6 | 34·7 | 21st | 60·4 | 15th |
| **1.** SCOTLAND, E. | Glenalmond | 29·719 | 49·2 | 47·3 | 48·3 | 41·4 | 55·6 | 48·5 | 34·2 | 21st | 61·7 | 18th |
| **2.** ENGLAND, N.E. | Seaham | 29·733 | 53·3 | 48·3 | 50·8 | 44·0 | 57·8 | 50·9 | 34·8 | 21st | 68·2 | 2nd |
| | Durham* | 29·732 | 54·0 | 46·4 | 50·2 | 42·6 | 59·2 | 50·9 | 32·3 | 21st | 70·8 | 5th |
| | Hull | 29·771 | 54·8 | 51·1 | 53·0 | 45·5 | 61·5 | 53·5 | 35·0 | 21st | 69·0 | 18th |
| | Kelstern 𝔐 | 29·773 | 53·2 | 48·6 | 50·9 | 44·4 | 59·5 | 52·0 | 34·6 | 21st | 69·4 | 18th |
| **3.** ENGLAND, E. | Hillington 𝔐 | 29·777 | 55·9 | 50·3 | 53·1 | 45·5 | 63·3 | 54·4 | 37·6 | 21st | 73·7 | 12th |
| | Audley End 𝔐 | 29·776 | 56·6 | 51·3 | 54·0 | 46·3 | 62·8 | 54·6 | 36·2 | 31st | 71·9 | 2nd, 18th |
| | Chigwell Row | 29·829 | 55·5 | 52·5 | 54·0 | 48·0 | 61·2 | 54·6 | 36·4 | 21st | 70·2 | 12th |
| **4.** MIDLAND COUNTIES. | Wakefield 𝔐 | 29·757 | 53·3 | 50·9 | 52·1 | 45·2 | 60·3 | 52·8 | 36·1 | 21st | 69·8 | 12th |
| | Buxton 𝔐 | 29·766 | 51·6 | 47·6 | 49·6 | 43·0 | 57·4 | 50·2 | 35·0 | 21st, 30th | 65·0 | 2nd |
| | Cheadle 𝔐 | 29·755 | 51·5 | 49·6 | 50·6 | 44·0 | 58·9 | 51·5 | 33·5 | 21st | 66·0 | 6th |
| | Leicester | 29·767 | 55·2 | 52·9 | 54·1 | 46·5 | 61·9 | 54·2 | 36·9 | 21st | 69·5 | 18th |
| | Uppingham | 29·769 | 54·1 | 50·1 | 52·1 | 44·9 | 61·6 | 53·3 | 34·6 | 21st | 71·3 | 6th |
| | Oscott | 29·762 | 53·7 | 50·9 | 52·3 | 45·3 | 61·0 | 53·2 | 35·0 | 21st | 68·2 | 12th |
| | Churchstoke 𝔐 | 29·785 | 53·5 | 50·8 | 52·2 | 45·9 | 59·3 | 52·6 | 34·3 | 21st | 64·7 | 11th |
| | Hereford 𝔐 | 29·760 | 54·3 | 51·5 | 52·9 | 45·9 | 61·0 | 53·5 | 35·1 | 21st | 67·8 | 10th |
| **5.** ENGLAND, S. | Marlborough 𝔐 | 29·801 | 54·6 | 51·2 | 52·9 | 46·3 | 62·0 | 54·2 | 35·3 | 31st | 69·8 | 10th |
| | Strathfield Turgiss 𝔐 | 29·804 | 56·6 | 51·4 | 54·0 | 45·7 | 63·5 | 54·6 | 36·3 | 31st | 72·2 | 10th |
| | Ramsgate 𝔐 | 29·832 | 55·7 | 52·4 | 54·1 | 48·9 | 60·6 | 54·8 | 40·5 | 22nd | 66·6 | 11th |
| | Folkestone | 29·820 | 54·9 | 51·9 | 53·4 | 47·8 | 59·6 | 53·7 | 39·2 | 21st | 65·8 | 12th |
| | Southampton† | 29·809 | 56·9 | 52·6 | 54·8 | 49·0 | 61·3 | 55·2 | 40·3 | 21st | 68·0 | 13th |
| | Hastings | 29·825 | 54·9 | 52·1 | 53·5 | 48·5 | 59·6 | 54·1 | 39·6 | 21st | 67·7 | 10th |
| **6.** SCOTLAND, W. | —— | — | — | — | — | — | — | — | — | — | — | — |
| **7.** ENGLAND, N.W. | Douglas | 29·703 | 51·3 | 49·0 | 50·2 | 44·9 | 55·7 | 50·3 | 36·9 | 28th | 60·9 | 28th |
| | Prestwich | 29·740 | 52·4 | 50·4 | 51·4 | 45·2 | 59·3 | 52·3 | 35·2 | 21st | 66·5 | 6th |
| | Llandudno 𝔐 | 29·728 | 55·2 | 51·4 | 53·3 | 48·0 | 61·9 | 55·0 | 39·6 | 21st | 71·0 | 12th |
| **8.** ENGLAND, S.W. | Caermarthen 𝔐 | 29·751 | 55·7 | 50·7 | 53·2 | 46·8 | 61·1 | 54·0 | 36·2 | 21st | 66·0 | 10th |
| | Dartmoor 𝔐 | 29·790 | 49·5 | 46·7 | 48·1 | 43·4 | 53·3 | 48·4 | 35·8 | 21st | 60·8 | 31st |
| | Babbacombe 𝔐 | 29·797 | 54·4 | 50·7 | 52·6 | 47·5 | 59·1 | 53·3 | 38·2 | 21st | 63·9 | 18th |
| **9.** IRELAND, N. | Markree Castle | 29·678 | 52·0 | 49·7 | 50·9 | 44·9 | 59·1 | 52·0 | 33·3 | 30th | 64·6 | 18th |
| **10.** IRELAND, S. | Dublin | 29·719 | 54·3 | 51·5 | 52·9 | 47·5 | 59·4 | 53·5 | 39·9 | 21st | 65·9 | 17th |
| | Parsonstown | 29·703 | 53·4 | 49·9 | 51·7 | 45·4 | 60·8 | 53·1 | 38·7 | 21st | 65·3 | 5th |
| CHANNEL | Jersey (St. Aubin's) | 29·877 | 56·8 | 53·6 | 55·2 | 50·0 | 60·6 | 55·3 | 45·1 | 5th | 66·3 | 17th |

Note.—The stations marked thus 𝔐 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of MAY 1878.
corrected for Diurnal Range.
beginning in each case with the Station lying furthest North.)

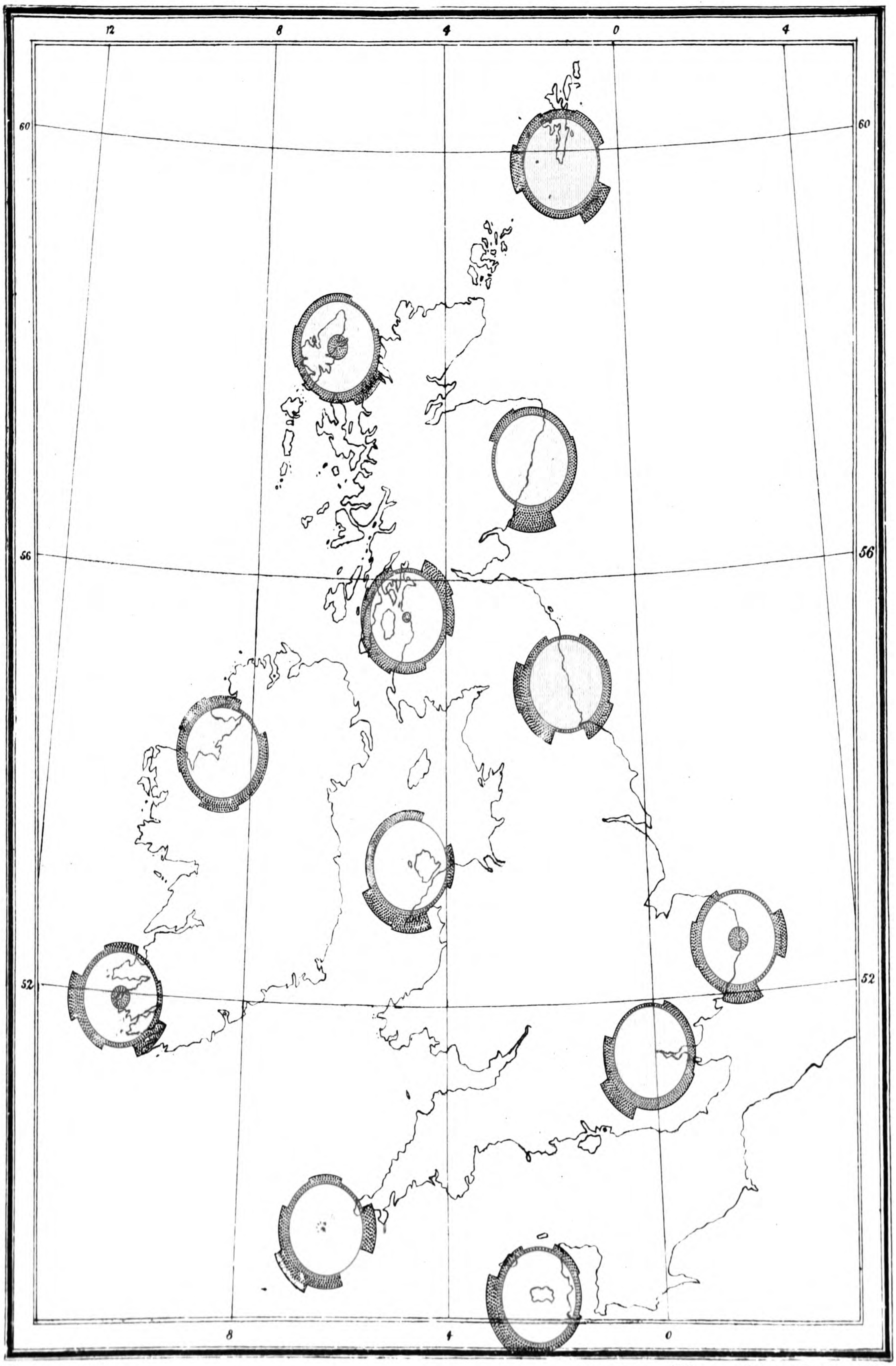
| TENSION OF VAPOUR. | | | RELATIVE HUMIDITY. | | | AMOUNT OF CLOUD (0 to 10). | | | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·282 | ·268 | ·275 | 80 | 86 | 83 | 4·9 | 6·0 | 5·5 | 2·910 | ·090 | 27th | 18 | 2 | 1 | 1 | 4 | 7 | 1 | 3 | 2 | 9 | 14 | 9 | 3 | 9 | 11 | 2 |
| ·277 | ·286 | ·282 | 79 | 87 | 83 | 7·1 | 6·8 | 7·0 | 5·181 | 1·120 | 6th | 17 | 2 | 3 | 4 | 0 | 9 | 0 | 3 | 5 | 15 | 7 | 5 | 9 | 9 | 6 | 2 |
| ·323 | ·301 | ·312 | 79 | 90 | 85 | 7·3 | 5·6 | 6·5 | 2·795 | ·550 | 7th | 20 | 1 | 2 | 6 | 1 | 9 | 0 | 5 | 2 | 6 | 7 | 7 | 12 | 8 | 1 | 14 |
| ·329 | ·288 | ·309 | 79 | 91 | 85 | 7·8 | 5·0 | 6·4 | 4·087 | ·690 | 7th | 23 | 0 | 1 | 7 | 0 | 10 | 0 | 3 | 8 | 11 | 5 | 13 | 12 | 6 | 3 | 1 |
| ·359 | ·320 | ·340 | 84 | 84 | 84 | 7·8 | 5·3 | 6·6 | 2·360 | ·670 | 7th | 20 | 0 | 0 | 2 | 2 | 12 | 0 | 2 | 9 | 2 | 9 | 6 | 16 | 7 | 5 | 6 |
| ·355 | ·323 | ·339 | 87 | 94 | 91 | 7·5 | 5·8 | 6·7 | 3·441 | ·434 | 17th | 26 | 0 | 2 | 7 | 1 | 10 | 0 | 3 | 3 | 8 | 10 | 10 | 16 | 6 | 3 | 3 |
| ·356 | ·330 | ·343 | 80 | 90 | 85 | 8·6 | 6·8 | 7·7 | 3·952 | 1·230 | 17th | 25 | 1 | 1 | 9 | 0 | 14 | 1 | 0 | 10 | 5 | 14 | 5 | 18 | 2 | 8 | 0 |
| ·362 | ·338 | ·350 | 79 | 89 | 84 | 7·6 | 6·5 | 7·1 | 3·580 | 1·000 | 7th | 23 | 0 | 1 | 6 | 1 | 11 | 0 | 0 | 7 | 1 | 12 | 3 | 23 | 1 | 12 | 3 |
| ·338 | ·336 | ·337 | 76 | 85 | 81 | 8·2 | 6·8 | 7·5 | 3·380 | ·850 | 7th | 23 | 0 | 0 | 4 | 1 | 12 | 2 | 0 | 4 | 10 | 8 | 11 | 19 | 6 | 4 | 0 |
| ·321 | ·313 | ·317 | 79 | 84 | 82 | 7·7 | 6·2 | 7·0 | 4·320 | ·670 | 6th | 23 | 0 | 1 | 2 | 1 | 12 | 0 | 6 | 5 | 6 | 5 | 8 | 5 | 13 | 3 | 11 |
| ·307 | ·293 | ·300 | 80 | 88 | 84 | 8·0 | 6·9 | 7·5 | 6·080 | ·510 | 23rd | 26 | 0 | 2 | 4 | 0 | 13 | 0 | 3 | 2 | 8 | 6 | 4 | 12 | 13 | 14 | 0 |
| ·317 | ·306 | ·312 | 83 | 86 | 85 | 6·8 | 7·3 | 7·0 | 4·700 | ·730 | 7th | 24 | 0 | 0 | 7 | 1 | 12 | 3 | 2 | 6 | 8 | 7 | 13 | 11 | 10 | 5 | 0 |
| ·333 | ·328 | ·331 | 75 | 82 | 79 | 8·8 | 7·2 | 8·0 | 4·710 | 1·140 | 7th | 25 | 1 | 2 | 4 | 0 | 18 | 1 | 0 | 9 | 4 | 6 | 11 | 22 | 6 | 2 | 2 |
| ·344 | ·321 | ·333 | 82 | 88 | 85 | 8·6 | 6·7 | 7·7 | 5·148 | 1·353 | 7th | 23 | 0 | 1 | 7 | 0 | 14 | 2 | 2 | 7 | 5 | 3 | 12 | 11 | 12 | 3 | 7 |
| ·337 | ·325 | ·331 | 81 | 87 | 84 | 8·9 | 7·7 | 8·3 | 4·730 | 1·120 | 10th | 25 | 0 | 1 | 5 | 0 | 22 | 3 | 6 | 8 | 5 | 5 | 13 | 15 | 8 | 2 | 0 |
| ·323 | ·305 | ·314 | 79 | 82 | 80 | 6·0 | 6·2 | 6·1 | 2·154 | ·715 | 8th | 24 | 0 | 1 | 6 | 0 | 4 | 0 | 4 | 2 | 6 | 11 | 9 | 21 | 4 | 4 | 1 |
| ·337 | ·327 | ·332 | 80 | 86 | 83 | 8·2 | 6·6 | 7·4 | 4·782 | ·820 | 10th | 23 | 0 | 0 | 2 | 1 | 11 | 0 | 1 | 3 | 4 | 1 | 6 | 13 | 4 | 1 | 29 |
| ·352 | ·340 | ·346 | 83 | 90 | 86 | 8·4 | 6·7 | 7·6 | 4·259 | ·884 | 10th | 23 | 0 | 1 | 6 | 2 | 16 | 0 | 1 | 1 | 11 | 2 | 7 | 23 | 5 | 0 | 12 |
| ·372 | ·351 | ·362 | 81 | 92 | 87 | 7·5 | 5·8 | 6·7 | 2·712 | ·432 | 10th | 16 | 0 | 1 | 7 | 1 | 10 | 0 | 1 | 0 | 5 | 3 | 10 | 25 | 9 | 1 | 8 |
| ·357 | ·349 | ·353 | 80 | 89 | 84 | 7·3 | 6·2 | 6·8 | 3·954 | ·945 | 7th | 23 | 0 | 0 | 3 | 1 | 9 | 3 | 2 | 10 | 4 | 1 | 5 | 27 | 5 | 2 | 6 |
| ·368 | ·350 | ·359 | 85 | 90 | 88 | 7·6 | 6·1 | 6·9 | 2·920 | ·760 | 28th | 20 | 0 | 1 | 4 | 1 | 11 | 1 | 4 | 3 | 8 | 6 | 9 | 17 | 12 | 1 | 2 |
| ·337 | ·334 | ·336 | 73 | 84 | 78 | 8·3 | 5·8 | 7·1 | 4·395 | ·858 | 26th | 22 | 0 | 0 | 2 | 0 | 16 | 4 | 3 | 3 | 1 | 10 | 4 | 27 | 3 | 9 | 2 |
| ·349 | ·344 | ·347 | 81 | 88 | 84 | 7·2 | 5·6 | 6·4 | 3·635 | ·920 | 28th | 21 | 0 | 1 | 10 | 4 | 12 | 7 | 4 | 8 | 8 | 4 | 9 | 17 | 10 | 2 | 0 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·334 | ·326 | ·330 | 88 | 94 | 91 | 8·1 | 6·8 | 7·5 | 3·457 | ·540 | 17th | 18 | 0 | 0 | 2 | 1 | 16 | 2 | 4 | 3 | 13 | 6 | 8 | 11 | 6 | 7 | 4 |
| ·317 | ·309 | ·313 | 80 | 84 | 82 | 8·2 | 6·3 | 7·3 | 3·782 | ·575 | 23rd | 25 | 0 | 3 | 7 | 1 | 15 | 0 | 1 | 7 | 6 | 5 | 13 | 6 | 7 | 6 | 11 |
| ·335 | ·321 | ·328 | 77 | 84 | 81 | 6·8 | 5·2 | 6·0 | 2·450 | ·310 | 27th | 22 | 1 | 1 | 0 | 5 | 12 | 0 | 7 | 1 | 10 | 3 | 7 | 6 | 23 | 5 | 0 |
| ·369 | ·348 | ·359 | 83 | 94 | 89 | 7·5 | 5·5 | 6·5 | 4·460 | ·720 | 16th | 23 | 0 | 0 | 4 | 4 | 11 | 0 | 8 | 1 | 6 | 3 | 5 | 20 | 9 | 4 | 6 |
| ·315 | ·297 | ·306 | 89 | 93 | 91 | 9·0 | 6·9 | 8·0 | 9·330 | 2·170 | 16th | 24 | 0 | 0 | 2 | 0 | 20 | 3 | 0 | 2 | 8 | 5 | 7 | 16 | 8 | 12 | 4 |
| ·343 | ·328 | ·336 | 81 | 89 | 85 | 7·6 | 6·5 | 7·1 | 4·100 | ·950 | 16th | 22 | 0 | 2 | 2 | 1 | 15 | 2 | 4 | 5 | 4 | 3 | 7 | 16 | 14 | 7 | 2 |
| ·313 | ·300 | ·307 | 81 | 84 | 82 | 8·4 | 6·8 | 7·6 | 4·040 | ·432 | 10th | 25 | 0 | 1 | 0 | 0 | 15 | 0 | 8 | 4 | 8 | 9 | 9 | 8 | 6 | 8 | 2 |
| ·317 | ·318 | ·318 | 75 | 83 | 79 | 6·5 | 5·5 | 6·0 | 4·540 | 1·220 | 10th | 23 | 0 | 5 | 1 | 1 | 7 | 0 | 7 | 4 | 4 | 7 | 7 | 12 | 12 | 7 | 2 |
| ·320 | ·310 | ·315 | 78 | 86 | 82 | 8·8 | 6·7 | 7·8 | 3·421 | ·367 | 10th | 24 | 0 | 1 | 1 | 0 | 16 | 0 | 5 | 1 | 2 | 13 | 6 | 10 | 10 | 10 | 5 |
| ·366 | ·355 | ·361 | 79 | 86 | 83 | 5·9 | 6·4 | 6·2 | 3·027 | ·658 | 13th | 22 | 0 | 0 | 3 | 4 | 10 | 0 | 4 | 5 | 3 | 7 | 7 | 16 | 8 | 5 | 7 |

TABLE C., MAY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of MAY 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. | | | | | | | | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Means of | | | | Absolute Extremes. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | At 8 a.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. | | | | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| 0. SCOTLAND, N. | Sumburgh Head | 29·680 | 47·4 | 41·7 | 51·8 | 46·8 | 32 | 21st | 57 | 17th | 0·266 | 83 | 6·5 | 1·50 | 0·42 | 18th | 17 | 1 | 0 | 0 | 5 | 9 | 1 | 3 | 4 | 1 | 7 | 3 | 3 | 6 | 4 | 0 |
| | Thurso | 29·674 | 50·1 | 42·3 | 57·3 | 49·8 | 33 | 23rd | 66 | 12th | ·292 | 81 | 6·2 | 2·79 | 0·50 | 21st | 22 | 0 | 2 | 1 | 4 | 8 | 0 | 1 | 2 | 3 | 6 | 6 | 1 | 4 | 5 | 3 |
| | Wick | 29·686 | 49·9 | 41·9 | 56·8 | 49·4 | 32 | 21st, 23rd | 65 | 5th | ·285 | 80 | 4·8 | 1·28 | 0·28 | 21st | 14 | 0 | 0 | 0 | 11 | 8 | 0 | 2 | 0 | 4 | 6 | 5 | 5 | 6 | 2 | 1 |
| | Stornoway | 29·637 | 50·4 | 42·5 | 54·4 | 48·5 | 32 | 21st | 64 | 6th | ·294 | 81 | 5·2 | 2·24 | 0·41 | 19th | 18 | 1 | 2 | 0 | 9 | 8 | 4 | 3 | 1 | 3 | 6 | 4 | 3 | 4 | 3 | 4 |
| 1. SCOTLAND, E. | Nairn | 29·691 | 49·8 | 42·5 | 58·6 | 50·6 | 34 | 10th | 69 | 6th, 13th | ·263 | 74 | 5·2 | 1·58 | 0·66 | 19th | 12 | 0 | 0 | 2 | 9 | 8 | 1 | 1 | 1 | 4 | 1 | 0 | 6 | 1 | 4 | 13 |
| | Aberdeen | 29·711 | 49·3 | 43·6 | 56·4 | 50·0 | 37 | 20th, 21st, 25th. | 65 | 5th | ·277 | 78 | 4·6 | 2·01 | 0·47 | 21st | 15 | 0 | 1 | 1 | 15 | 8 | 0 | 3 | 3 | 4 | 4 | 11 | 1 | 1 | 4 | 0 |
| | Leith | 29·688 | 51·2 | 44·3 | 58·7 | 51·5 | 34 | 10th. | 72 | 5th | ·311 | 83 | 5·8 | 2·25 | 0·57 | 7th | 21 | 0 | 2 | 2 | 3 | 8 | 0 | 0 | 5 | 9 | 3 | 1 | 5 | 3 | 4 | 1 |
| 2. ENGLAND, N.E. | Shields | 29·737 | 50·9 | 44·8 | 56·1 | 50·5 | 35 | 21st | 64 | 18th | ·302 | 82 | 6·9 | 2·07 | 0·38 | 7th | 22 | 0 | 5 | 2 | 3 | 12 | 3 | 1 | 3 | 4 | 6 | 1 | 6 | 7 | 3 | 0 |
| | Scarborough | 29·752 | 51·8 | 46·5 | 57·4 | 52·0 | 36 | 21st | 66 | 12th | ·318 | 82 | 7·5 | 2·73 | 0·61 | 23rd | 17 | 0 | 1 | 5 | 4 | 15 | 0 | 2 | 1 | 3 | 8 | 4 | 6 | 4 | 3 | 0 |
| | York | 29·750 | 51·7 | 45·2 | 60·1 | 52·7 | 33 | 21st | 69 | 2nd | ·322 | 84 | 6·3 | 3·56 | 0·50 | 23rd | 20 | 0 | 1 | 9 | 7 | 15 | 0 | 1 | 3 | 7 | 2 | 5 | 8 | 3 | 2 | 0 |
| 3. ENGLAND, E. | Yarmouth | 29·788 | 52·8 | 47·9 | 58·1 | 53·0 | 39 | 22nd | 71 | 18th | ·335 | 84 | 4·5 | 3·72 | 1·13 | 8th | 21 | 0 | 2 | 3 | 13 | 3 | 3 | 1 | 1 | 5 | 1 | 7 | 4 | 5 | 3 | 4 |
| | Cambridge | 29·778 | 54·3 | 45·8 | 64·2 | 55·0 | 36 | 21st | 73 | 2nd, 18th, | ·357 | 84 | 7·0 | 3·45 | 1·01 | 7th | 24 | 0 | 1 | 7 | 6 | 17 | 0 | 2 | 1 | 4 | 2 | 5 | 10 | 2 | 3 | 2 |
| 4. MIDLAND COUNTIES. | Nottingham | 29·760 | 54·5 | 45·6 | 65·7 | 55·7 | 35 | 21st | 75 | 1st, 2nd | ·345 | 82 | 8·0 | 4·21 | 0·71 | 8th | 24 | 0 | 0 | 4 | 3 | 18 | 2 | 4 | 2 | 1 | 3 | 7 | 5 | 5 | 3 | 1 |
| | Oxford | 29·775 | 53·2 | 47·3 | 61·4 | 54·4 | 37 | 21st | 70 | 18th | ·344 | 85 | 8·5 | 4·80 | 0·69 | 7th | 22 | 0 | 0 | 5 | 3 | 23 | 0 | 1 | 2 | 2 | 1 | 6 | 7 | 6 | 2 | 4 |
| 5. ENGLAND, S. | London | 29·792 | 54·9 | 48·4 | 64·6 | 56·5 | 38 | 21st | 74 | 18th | ·353 | 83 | 7·3 | 2·96 | 0·47 | 7th | 23 | 0 | 0 | 1 | 3 | 15 | 3 | 1 | 3 | 3 | 4 | 4 | 10 | 5 | 1 | 0 |
| | Dover | 29·805 | 54·8 | 49·9 | 58·5 | 54·2 | 42 | 21st | 64 | 17th, 18th | ·354 | 83 | 5·0 | 2·31 | 0·64 | 10th | 19 | 0 | 0 | 2 | 10 | 5 | 1 | 1 | 2 | 7 | 0 | 1 | 11 | 7 | 1 | 1 |
| | Hurst Castle | 29·789 | 55·0 | 49·4 | 60·2 | 54·8 | 41 | 21st | 66 | 10th | ·375 | 87 | 5·8 | 3·17 | 0·50 | 16th | 19 | 0 | 0 | 2 | 6 | 7 | 5 | 2 | 1 | 4 | 2 | 4 | 7 | 9 | 2 | 0 |
| 6. SCOTLAND, W. | Ardrossan | 29·680 | 51·2 | 46·8 | 58·2 | 52·5 | 38 | 22nd | 68 | 6th | ·297 | 79 | 6·7 | 3·08 | 0·42 | 17th | 21 | 1 | 1 | 1 | 6 | 14 | 1 | 1 | 6 | 5 | 2 | 4 | 5 | 4 | 3 | 1 |
| 7. ENGLAND, N.W. | Liverpool | 29·717 | 52·5 | 47·7 | 59·4 | 53·6 | 41 | 21st, 22nd | 67 | 5th, 12th | ·336 | 85 | 6·4 | 3·96 | 0·59 | 7th | 23 | 0 | 0 | 0 | 8 | 13 | 1 | 0 | 3 | 6 | 6 | 2 | 4 | 8 | 1 | 1 |
| | Holyhead | 29·705 | 51·8 | 48·7 | 57·9 | 53·3 | 44 | 21st | 65 | 12th | ·341 | 88 | 6·1 | 2·88 | 0·68 | 11th | 21 | 0 | 0 | 0 | 8 | 9 | 1 | 4 | 0 | 3 | 1 | 8 | 7 | 4 | 4 | 0 |
| 8. ENGLAND, S.W. | Pembroke | 29·721 | 52·0 | 48·3 | 56·5 | 52·4 | 44 | 5th | 63 | 30th | ·335 | 86 | 6·2 | 3·35 | 0·82 | 10th | 18 | 0 | 0 | 1 | 5 | 9 | 8 | 2 | 2 | 2 | 4 | 4 | 7 | 3 | 4 | 3 |
| | Portishead | 29·756 | 53·2 | 47·1 | 61·3 | 54·2 | 41 | 5th | 70 | 10th | ·342 | 84 | 7·7 | 6·71 | 0·93 | 27th | 25 | 0 | 0 | 2 | 3 | 16 | 6 | 5 | 2 | 2 | 1 | 5 | 11 | 4 | 1 | 0 |
| | Plymouth | 29·772 | 54·4 | 49·4 | 60·3 | 54·9 | 40 | 21st | 63 | 5th, 9th, 11th, 12th, 31st. | ·361 | 85 | 7·8 | 4·21 | 0·86 | 10th | 22 | 0 | 0 | 1 | 3 | 19 | 4 | 1 | 1 | 6 | 1 | 8 | 8 | 1 | 4 | 1 |
| 9. IRELAND, N. | Greencastle | 29·650 | 51·1 | 45·1 | 58·5 | 51·8 | 35 | 21st | 68 | 5th | ·305 | 81 | 7·9 | 4·44 | 0·56 | 20th | 20 | 0 | 0 | 1 | 5 | 21 | 0 | 4 | 4 | 6 | 3 | 7 | 4 | 2 | 1 | 0 |
| | Donaghadee | 29·688 | 50·6 | 45·8 | 56·5 | 51·2 | 39 | 21st, 22nd | 65 | 17th | ·331 | 90 | 5·8 | 4·15 | 0·58 | 27th | 21 | 0 | 0 | 0 | 8 | 11 | 3 | 5 | 4 | 1 | 4 | 5 | 6 | 5 | 1 | 0 |
| 10. IRELAND, S. | Kingstown | 29·699 | 51·8 | 48·4 | 57·7 | 53·1 | 41 | 21st | 65 | 17th | ·318 | 82 | 6·6 | 4·70 | 0·87 | 10th | 24 | 0 | 1 | 1 | 4 | 11 | 2 | 1 | 0 | 0 | 8 | 3 | 2 | 7 | 8 | 2 |
| | Valencia | 29·670 | 53·6 | 48·1 | 58·2 | 53·2 | 42 | 27th | 65 | 30th | ·317 | 77 | 6·9 | 6·04 | 0·81 | 22nd | 23 | 0 | 0 | 0 | 5 | 13 | 10 | 3 | 1 | 2 | 7 | 2 | 4 | 7 | 2 | 3 |
| | Roche's Point | 29·692 | 53·2 | 47·4 | 61·2 | 54·3 | 43 | 8th, 21st, 23rd, 24th. | 67 | 31st | ·325 | 79 | 6·2 | 7·03 | 0·75 | 16th | 21 | 0 | 0 | 1 | 4 | 7 | 3 | 5 | 1 | 4 | 1 | 5 | 6 | 7 | 2 | 0 |
| CHANNEL ISLANDS | Scilly | 29·763 | 54·3 | 50·9 | 57·8 | 54·4 | 48 | 21st | 61 | 18th | ·364 | 85 | 7·4 | 3·09 | 0·39 | 12th | 25 | 0 | 0 | 0 | 1 | 13 | 10 | 3 | 1 | 6 | 0 | 5 | 9 | 5 | 2 | 0 |
| | Jersey | 29·810 | 54·2 | 50·2 | 59·1 | 54·7 | 44 | 5th | 67 | 10th | ·364 | 86 | 6·0 | 2·96 | 0·59 | 13th | 18 | 0 | 0 | 3 | 7 | 12 | 5 | 1 | 3 | 2 | 3 | 3 | 8 | 8 | 3 | 0 |

# MONTHLY WIND CHART FOR MAY 1878.

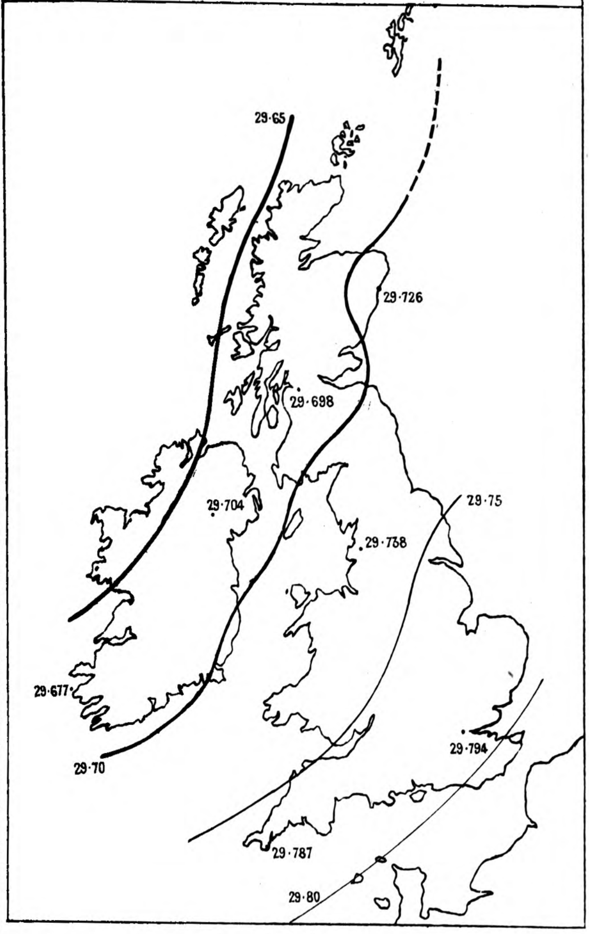

12
8
4
0
4
60
60
56
56
52
52
8
4
0

*To face p. 6.*

DANGERFIELD LITH. 22, BEDFORD ST COVENT GARDEN 13390

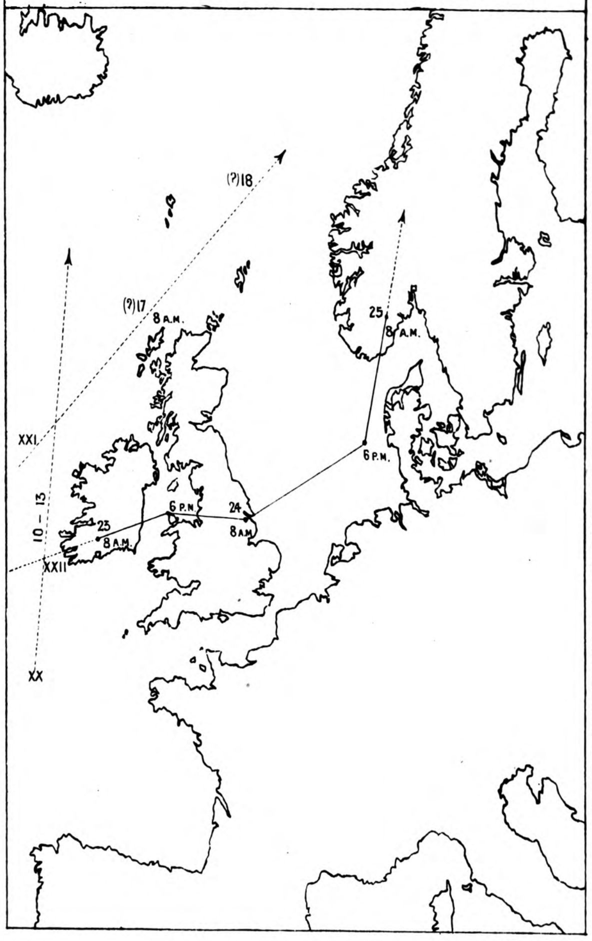
# MONTHLY WEATHER CHART. MAY, 1878.

## 1. DISTRIBUTION OF MEAN PRESSURE



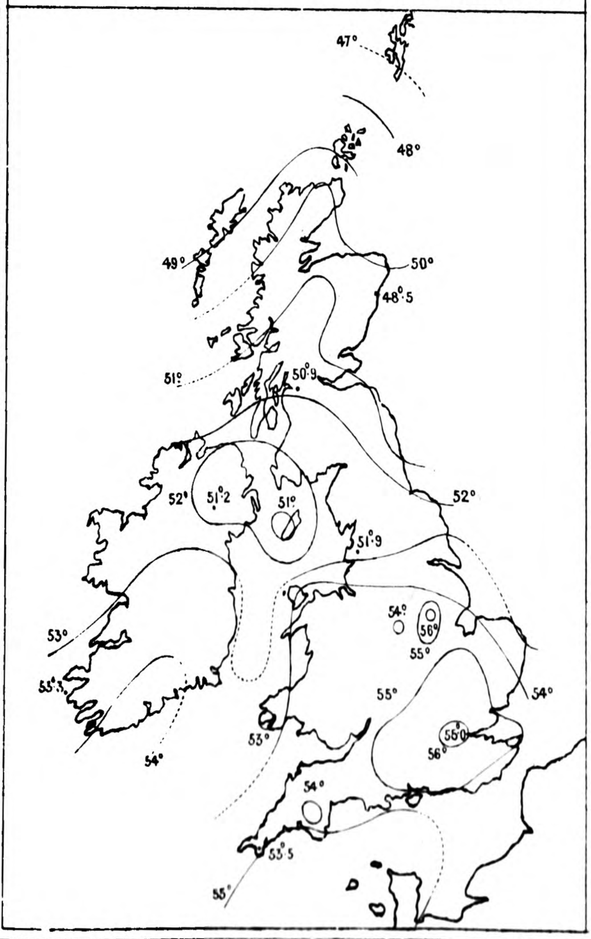
29·65
29·726
29·698
29·704
29·738
29·75
29·677
29·70
29·794
29·787
29·80

## 2. MOVEMENTS OF DEPRESSIONS.



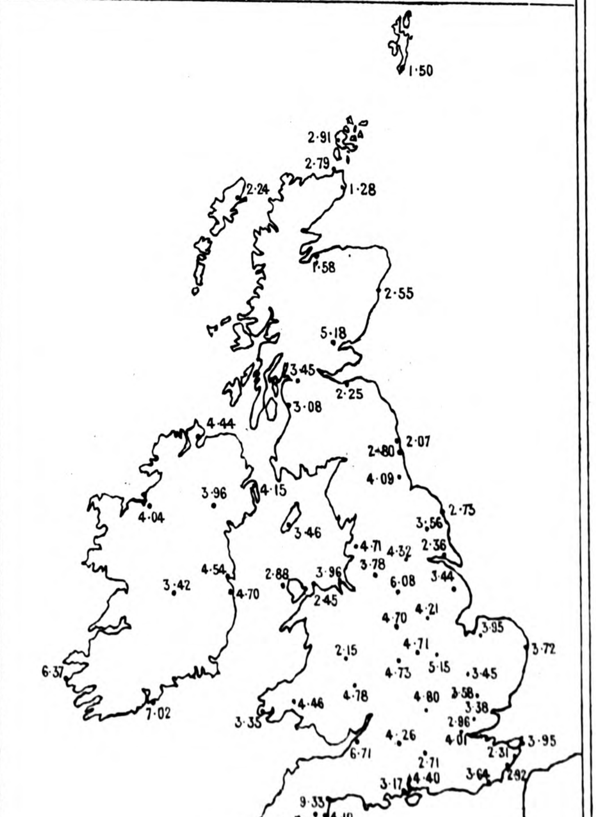
(?)18
(?)17
8 A.M.
25
8 A.M.
XXI.
6 P.M.
10 – 13
6 P.N.
24
23
8 A.M.
8 A.M.
XXII
XX

## 3. DISTRIBUTION OF MEAN TEMPERATURE



47°
48°
49°
50°
48°·5
51°
50°·9
52°
51°·2
51°
52°
51°·9
54°
56°
55°
53°
53°·3
55°
54°
53°
56°·0
56°
54°
54°
53°·5
55°

## 4. RAINFALL



1·50
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2·79
2·24
1·28
1·58
2·55
5·18
3·45
2·25
3·08
4·44
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2·80
4·09
3·96
4·15
4·04
2·73
3·56
3·46
4·71
4·32
2·36
3·78
4·54
2·88
3·96
6·08
3·44
3·42
4·70
2·45
4·21
4·70
3·95
2·15
4·71
3·72
4·73
5·15
3·45
6·37
4·46
4·78
4·80
3·58
3·38
7·02
3·35
2·86
4·26
4·01
3·95
6·71
2·31
2·71
3·17
4·40
3·64
2·82
9·33
4·10
4·21
3·00
5·57
2·96
3·03

*To follow Wind Chart for May*

DANGERFIELD, LITH. 22, BEDFORD ST COVENT GARDEN. 13389. 12/86

## REMARKS FOR JUNE 1878.

(*Tables A. to C., June, with Monthly Wind and Weather Charts.*)

*Wind.*—Light or moderate breezes, at first from the Northward and then from South-east or South, blew during the first two or three days. On the 4th the wind circulated round a shallow centre of low pressure which lay over central England, and was fresh from the Westward over the Channel and southern England, while it was Easterly in Scotland and Northerly in Ireland. This was followed by another short spell of light airs till on the 6th a Southerly current began to show itself over southern England, from whence it gradually extended to the whole of the United Kingdom. On the 9th the wind veered, and a moderate Westerly breeze prevailed till the close of the following day, when it again backed to the Southward and over southern England, freshened a good deal, rising in places to a moderate gale. Another complete cyclonic circulation was observed on the 11th, when fresh or strong Westerly winds blew over southern England, moderate Southerly winds on the Eastern coasts, and Easterly winds over Scotland. These were followed by Northerly winds which soon fell light, and till the close of the 19th both the force and direction of the wind were very changeable. The wind then began to draw to the Southward, freshening somewhat in the west for a few hours, and until the 27th it blew mainly from that quarter with light or moderate force, veering occasionally for a little while to the Westward and at other times falling calm. On the 27th a retrograde movement began, and from thence till the close of the month moderate winds chiefly from between South-east and North-east prevailed.

The percentages shown on the monthly chart are indicative of the variable character of the wind, and fail to indicate any marked preponderance of one current over another. Thus, while at Sandwick the winds were almost exclusively from North, North-east, or South-east, at Scilly they were mainly from South, South-west, or West, and at many intermediate stations they were pretty evenly distributed all round the compass.

*Pressure.*—The mean pressure ranged from 29·96 inches in the south-east of England to 29·86 inches along the north-western coasts of Ireland and Scotland. The minimum readings were nowhere very low, and were generally recorded during the progress of a depression which crossed over northern England on the 11th; the maxima occurred a few days earlier, on the 6th, at which time an anticyclone lay over France. The range of pressure was small, amounting to an inch at Armagh and to only three-quarters of an inch at Kew.

*Movements of the Depressions.*—The depressions observed during the month were again few and unimportant. Two systems, neither of them deep, passed eastwards across England to the North Sea, and the centres of others approached our western coasts, but not sufficiently near to come under direct observation. On the Continent, however, a system was observed to follow a very unusual track, as it travelled north-westwards from Austria across northern Germany to the North Sea.

*Temperature.*—The mean temperature for the month was in no respect remarkable, the values ranging from 61° over the south of England to 56° in the west of Ireland, and 50° in the Shetlands. The range of temperature was, however, considerable, and while it exceeded 50° at several stations, it amounted to 56° at Nottingham. This was mainly due to the high maxima experienced about the 26th and 27th, when the thermometer rose to 95° at Nottingham, 93° at Llandudno, and 91° in London. The minima occurred very irregularly, and in places they were rather low; at Wick 33° was recorded, and at several stations in south-eastern England the thermometer fell below 40°.

*Vapour Tension.*—The mean values varied from ·44 inch at the mouth of the Channel, to about ·32 inch in the north of Scotland; but over the greater part of the kingdom the values were generally a little less than ·40 inch. *Relative Humidity* was also greatest in the south-west of England, and least in the north-east of Scotland, but at some individual stations in central England the air was almost equally dry.

*Rainfall.*—The fall of rain was rather unequally distributed over the kingdom, and owing to heavy local falls the amount recorded at some stations was in excess of the averages while at others not far distant it was below it. In Ireland the precipitation was generally large, but especially so in the south, upwards of 8 inches having been recorded at Roche', Point. The largest daily fall was 2·75 inches recorded at Chigwell Row, in Essex, on the 30th; but 1·88 inches fell at Scarborough on the 23rd, 1·75 inches at Roche's Point on the 27th, and upwards of an inch at several stations on various days.

### TABLE A.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of JUNE 1878; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE In the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation = 100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia - - | 29·874 | 29·299 | 11th, 7 a.m. | 30·176 | 6th, 1 a.m. | 0·877 | 56·9 | 45·8 | 1st, 5 a.m. | 69·0 | 30th, 4 p.m. | 23·2 | ·384 | 83 | 5·524 |
| Armagh - - | 29·889 | 29·206 | 11th, 5 p.m. | 30·216 | 6th, 7 a.m. | 1·010 | 56·3 | 39·7 | 1st, 4 a.m. | 76·2 | 28th, 4 p.m. | 36·5 | ·379 | 83 | 3·610 |
| Glasgow - - | 29·891 | 29·265 | 11th, 11 p.m. | 30·181 | 6th, 10 a.m. | 0·916 | 56·7 | 40·5 | 5th, 3 a.m. | 84·9* | 27th, ? | 44·4 | ·336 | 72 | 2·728 |
| Aberdeen - - | 29·930 | 29·318 | 9th, 7 a.m. | 30·228 | 6th, 2 p.m. | 0·910 | 53·2 | 37·0 | 15th, 3 a.m. | 75·0 | 26th, 1 p.m. | 38·0 | ·320 | 79 | 1·890 |
| Falmouth - - | 29·946 | 29·367 | 11th, 11 a.m. | 30·284 | 6th, 10 a.m.<br>11 a.m. | 0·917 | 58·7 | 49·6 | 1st, 5 a.m. | 71·8 | 27th, 10 a.m.<br>1 p.m. | 22·2 | ·406 | 82 | 2·985 |
| Stonyhurst - - | 29·915 | 29·240 | 11th, 6 p.m. | 30·206 | 22nd, 7 a.m. | 0·966 | 57·6 | 40·0 | 14th, 4 a.m. | 83·6 | 27th, 2 p.m. | 43·6 | ·362 | 77 | 3·439 |
| Kew - - | 29·943 | 29·485 | 11th, 4 p.m. | 30·247* | 6th, 11 a.m. | 0·762 | 60·3 | 44·0 | 2nd, 3 a.m. | 85·6 | 26th, 2 p.m. | 41·6 | ·394 | 76 | 2·760 |

* Approximate reading, trace faint.

TABLE B., JUNE.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Means of | | | Absolute Extremes. | | | |
| | | | | | | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| 0. SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·922 | 54·2 | 51·8 | 53·0 | 47·5 | 58·4 | 53·0 | 36·8 | 7th | 73·0 | 25th |
| 1. SCOTLAND, E. | Glenalmond | 29·922 | 55·8 | 52·2 | 54·0 | 45·9 | 62·6 | 54·3 | 35·2 | 4th | 79·3 | 27th |
| 2. ENGLAND, N.E. | Seaham | 29·916 | 57·4 | 53·5 | 55·5 | 48·5 | 62·2 | 55·4 | 38·6 | 1st | 76·8 | 24th |
| | Durham* | 29·910 | 60·4 | 52·6 | 56·5 | 47·2 | 66·4 | 56·8 | 34·9 | 1st | 87·0 | 27th |
| | Hull | 29·938 | 61·0 | 56·5 | 58·8 | 50·2 | 68·3 | 59·3 | 42·0 | 2nd, 15th | 86·5 | 26th |
| | Kelstern 𝔐 | 29·941 | 59·3 | 54·0 | 56·7 | 48·8 | 65·1 | 57·0 | 36·7 | 15th | 82·8 | 27th |
| 3. ENGLAND, E. | Hillington 𝔐 | 29·919 | 62·6 | 54·9 | 58·8 | 49·1 | 69·1 | 59·1 | 37·3 | 15th | 87·8 | 26th |
| | Audley End 𝔐 | 29·937 | 62·4 | 54·5 | 58·5 | 48·9 | 68·8 | 58·9 | 35·6 | 2nd | 85·9 | 26th |
| | Chigwell Row | 29·982 | 61·1 | 58·2 | 59·7 | 51·7 | 66·9 | 59·3 | 43·1 | 2nd, 15th | 83·0 | 26th |
| 4. MIDLAND COUNTIES. | Wakefield 𝔐 | 29·931 | 59·3 | 56·6 | 58·0 | 49·0 | 66·6 | 57·8 | 37·0 | 2nd | 86·8 | 27th |
| | Buxton 𝔐 | 29·943 | 57·2 | 52·9 | 55·1 | 47·0 | 63·4 | 55·2 | 36·0 | 2nd | 80·4 | 26th |
| | Cheadle 𝔐 | 29·934 | 56·9 | 55·3 | 56·1 | 49·1 | 65·3 | 57·2 | 41·3 | 6th | 82·0 | 27th |
| | Leicester | 29·927 | 61·6 | 60·0 | 60·8 | 51·4 | 67·8 | 59·6 | 41·5 | 6th | 85·0 | 26th, 27th |
| | Uppingham | 29·932 | 61·1 | 55·8 | 58·5 | 49·4 | 69·2 | 59·3 | 39·1 | 15th | 87·9 | 26th |
| | Oscott | 29·927 | 59·5 | 57·3 | 58·4 | 51·0 | 67·2 | 59·1 | 40·9 | 6th | 84·0 | 26th |
| | Churchstoke 𝔐 | 29·941 | 58·8 | 56·1 | 57·5 | 49·9 | 65·6 | 57·8 | 38·6 | 6th | 83·3 | 26th |
| | Hereford 𝔐 | 29·923 | 60·7 | 57·2 | 59·0 | 51·1 | 68·1 | 59·6 | 42·8 | 15th | 84·6 | 26th |
| 5. ENGLAND, S. | Marlborough 𝔐 | 29·953 | 61·1 | 57·2 | 59·2 | 51·2 | 69·1 | 60·2 | 41·6 | 15th | 84·8 | 26th |
| | Strathfield Turgiss 𝔐 | 29·957 | 63·2 | 56·8 | 60·0 | 48·8 | 70·7 | 59·8 | 39·4 | 15th | 89·1 | 26th |
| | Ramsgate 𝔐 | 29·984 | 61·1 | 57·0 | 59·1 | 53·5 | 66·4 | 60·0 | 45·8 | 16th | 82·7 | 26th |
| | Folkestone | 29·965 | 61·3 | 57·3 | 59·3 | 53·0 | 66·3 | 59·7 | 46·1 | 2nd, 16th | 83·2 | 26th |
| | Southampton† | 29·951 | 64·1 | 58·3 | 61·2 | 53·1 | 68·7 | 60·9 | 46·0 | 1st | 84·0 | 27th |
| | Hastings | 29·964 | 61·8 | 57·5 | 59·7 | 53·7 | 67·0 | 60·4 | 45·6 | 15th | 83·7 | 27th |
| 6. SCOTLAND, W. | —— | — | — | — | — | — | — | — | — | — | — | — |
| 7. ENGLAND, N.W. | Douglas | 29·895 | 56·6 | 53·4 | 55·0 | 49·1 | 61·0 | 55·1 | 41·2 | 22nd | 76·4 | 27th |
| | Prestwich | 29·914 | 58·5 | 55·9 | 57·2 | 50·0 | 64·8 | 57·4 | 38·3 | 6th | 84·6 | 27th |
| | Llandudno 𝔐 | 29·903 | 60·8 | 56·7 | 58·8 | 52·6 | 67·0 | 59·8 | 45·8 | 1st | 93·0 | 27th |
| 8. ENGLAND, S.W. | Caermarthen 𝔐 | 29·912 | 62·3 | 56·0 | 59·2 | 51·3 | 68·1 | 59·7 | 41·9 | 18th | 85·0 | 27th |
| | Dartmoor 𝔐 | 29·943 | 57·6 | 52·0 | 54·8 | 48·5 | 61·4 | 55·0 | 42·0 | 14th | 78·0 | 26th |
| | Babbacombe 𝔐 | 29·947 | 60·3 | 56·0 | 58·2 | 52·5 | 65·0 | 58·8 | 46·1 | 1st | 72·8 | 24th |
| 9. IRELAND, N. | Markree Castle | 29·864 | 58·5 | 54·8 | 56·7 | 48·8 | 64·1 | 56·5 | 37·1 | 1st | 75·6 | 29th |
| 10. IRELAND, S. | Dublin | 29·898 | 59·3 | 56·9 | 58·1 | 52·8 | 63·5 | 58·2 | 42·8 | 1st | 73·6 | 26th |
| | Parsonstown | 29·883 | 58·4 | 55·8 | 57·1 | 51·8 | 64·9 | 58·4 | 42·7 | 1st | 75·0 | 30th |
| CHANNEL | Jersey (St. Aubin's) | 30·006 | 62·7 | 58·4 | 60·6 | 55·1 | 67·9 | 61·5 | 49·7 | 16th | 84·1 | 26th |

NOTE.—The stations marked thus 𝔐 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of JUNE 1878.
corrected for Diurnal Range.
Latitude, beginning in each case with the Station lying furthest North.)

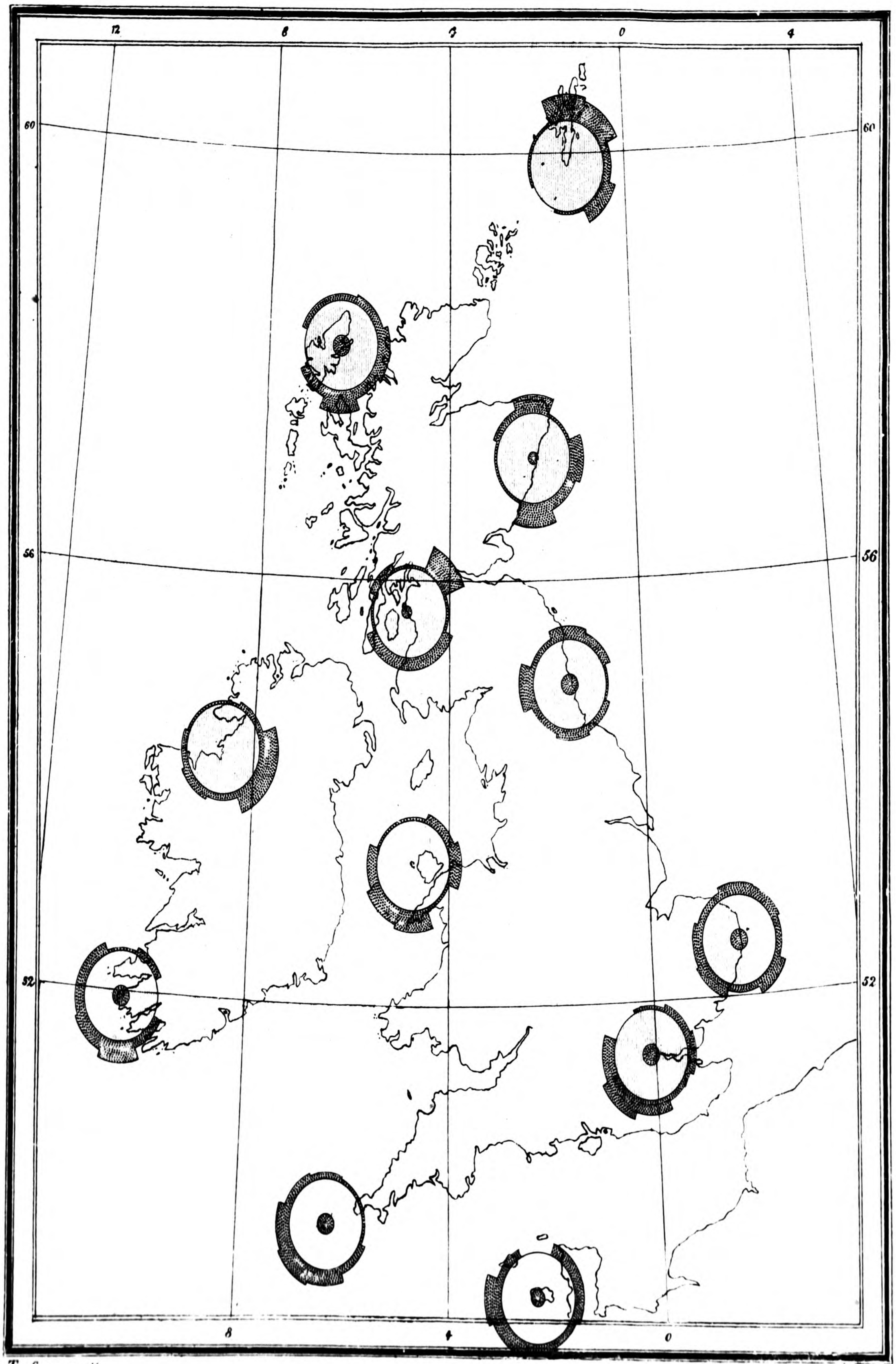
| TENSION OF VAPOUR. | | | RELATIVE HUMIDITY. | | | AMOUNT OF CLOUD (0 to 10). | | | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·315 | ·313 | ·314 | 75 | 81 | 78 | 6·2 | 5·1 | 5·7 | 1·250 | ·410 | 8th | 11 | 0 | 0 | 1 | 5 | 9 | 0 | 7 | 3 | 11 | 17 | 4 | 1 | 2 | 5 | 10 |
| ·351 | ·344 | ·348 | 78 | 87 | 83 | 7·0 | 7·1 | 7·1 | 4·010 | 1·553 | 7th | 11 | 0 | 0 | 1 | 0 | 11 | 0 | 0 | 4 | 19 | 9 | 11 | 10 | 2 | 1 | 4 |
| ·370 | ·367 | ·369 | 78 | 90 | 84 | 5·8 | 5·4 | 5·6 | 1·856 | ·866 | 11th | 13 | 0 | 0 | 5 | 5 | 9 | 0 | 11 | 4 | 3 | 5 | 12 | 7 | 4 | 1 | 13 |
| ·385 | ·365 | ·375 | 72 | 90 | 81 | 7·4 | 6·1 | 6·8 | 2·945 | 1·120 | 11th | 13 | 0 | 0 | 4 | 3 | 14 | 0 | 5 | 5 | 4 | 4 | 15 | 9 | 3 | 9 | 6 |
| ·383 | ·392 | ·388 | 72 | 86 | 79 | 6·7 | 5·7 | 6·2 | 2·050 | ·560 | 4th | 12 | 0 | 0 | 0 | 3 | 10 | 0 | 2 | 12 | 5 | 8 | 7 | 11 | 6 | 3 | 6 |
| ·402 | ·394 | ·398 | 79 | 93 | 86 | 6·8 | 6·2 | 6·5 | 2·372 | ·923 | 4th | 13 | 0 | 0 | 5 | 3 | 11 | 0 | 8 | 5 | 8 | 12 | 7 | 11 | 3 | 4 | 2 |
| ·418 | ·404 | ·411 | 73 | 92 | 82 | 6·8 | 5·9 | 6·4 | 2·053 | ·498 | 4th | 13 | 0 | 1 | 5 | 4 | 14 | 0 | 1 | 9 | 4 | 8 | 5 | 21 | 8 | 2 | 2 |
| ·416 | ·395 | ·406 | 73 | 92 | 82 | 6·6 | 4·5 | 5·6 | 1·660 | ·270 | 12th | 15 | 0 | 0 | 3 | 3 | 7 | 0 | 0 | 7 | 1 | 6 | 1 | 17 | 2 | 10 | 16 |
| ·393 | ·390 | ·392 | 73 | 80 | 77 | 7·5 | 6·4 | 7·0 | 5·760 | 2·750 | 30th | 16 | 0 | 0 | 6 | 2 | 13 | 0 | 1 | 4 | 11 | 7 | 9 | 9 | 9 | 2 | 8 |
| ·378 | ·385 | ·382 | 74 | 83 | 78 | 7·2 | 6·8 | 7·0 | 2·980 | ·580 | 3rd | 13 | 0 | 0 | 2 | 2 | 13 | 0 | 4 | 11 | 6 | 10 | 5 | 6 | 8 | 2 | 8 |
| ·361 | ·361 | ·361 | 76 | 88 | 82 | 6·6 | 7·7 | 7·2 | 4·000 | 1·120 | 4th | 16 | 0 | 0 | 2 | 1 | 13 | 0 | 3 | 3 | 8 | 10 | 4 | 11 | 9 | 12 | 0 |
| ·362 | ·366 | ·364 | 78 | 84 | 81 | 7·3 | 6·3 | 6·8 | 3·650 | ·770 | 12th | 15 | 0 | 0 | 2 | 2 | 13 | 1 | 4 | 0 | 16 | 12 | 11 | 4 | 6 | 6 | 1 |
| ·376 | ·395 | ·386 | 69 | 76 | 73 | 6·7 | 6·4 | 6·6 | 1·700 | ·440 | 9th | 15 | 0 | 0 | 2 | 3 | 11 | 1 | 1 | 12 | 2 | 7 | 16 | 17 | 2 | 1 | 2 |
| ·403 | ·393 | ·398 | 74 | 87 | 80 | 7·4 | 6·6 | 7·0 | 2·357 | ·665 | 26th | 10 | 0 | 1 | 3 | 3 | 14 | 0 | 3 | 9 | 4 | 5 | 8 | 10 | 6 | 3 | 12 |
| ·394 | ·398 | ·396 | 77 | 84 | 80 | 7·3 | 6·6 | 7·0 | 2·350 | ·510 | 29th | 16 | 0 | 1 | 7 | 4 | 14 | 0 | 5 | 8 | 7 | 8 | 13 | 7 | 5 | 5 | 2 |
| ·398 | ·379 | ·389 | 79 | 83 | 81 | 5·4 | 5·5 | 5·5 | 3·343 | ·490 | 3rd | 17 | 0 | 0 | 2 | 2 | 3 | 0 | 0 | 6 | 8 | 11 | 6 | 14 | 5 | 9 | 1 |
| ·402 | ·396 | ·399 | 75 | 84 | 80 | 6·7 | 5·8 | 6·3 | 2·371 | ·550 | 8th | 17 | 0 | 0 | 3 | 4 | 10 | 0 | 2 | 1 | 5 | 3 | 7 | 8 | 3 | 0 | 31 |
| ·409 | ·406 | ·408 | 76 | 86 | 81 | 7·1 | 6·0 | 6·6 | 3·978 | ·671 | 18th | 15 | 0 | 1 | 5 | 3 | 13 | 0 | 2 | 6 | 4 | 1 | 6 | 11 | 4 | 0 | 26 |
| ·434 | ·409 | ·422 | 75 | 88 | 81 | 6·3 | 5·6 | 6·0 | 1·339 | ·320 | 3rd | 14 | 0 | 0 | 9 | 5 | 12 | 0 | 1 | 0 | 8 | 7 | 6 | 25 | 3 | 4 | 6 |
| ·422 | ·398 | ·410 | 77 | 85 | 81 | 6·6 | 5·3 | 6·0 | 1·431 | ·583 | 24th | 9 | 0 | 0 | 0 | 2 | 6 | 2 | 0 | 17 | 4 | 7 | 3 | 17 | 2 | 4 | 6 |
| ·430 | ·403 | ·417 | 80 | 86 | 83 | 6·4 | 5·0 | 5·7 | 1·750 | ·690 | 16th | 11 | 0 | 1 | 6 | 4 | 7 | 0 | 7 | 3 | 19 | 4 | 5 | 11 | 5 | | 3 |
| ·389 | ·404 | ·397 | 66 | 83 | 74 | 7·2 | 6·2 | 6·7 | 1·733 | ·422 | 29th | 12 | 0 | 0 | 5 | 3 | 14 | 0 | 6 | 5 | 3 | 10 | 2 | 26 | 1 | 4 | 3 |
| ·406 | ·390 | ·398 | 74 | 83 | 79 | 6·5 | 5·4 | 6·0 | 1·170 | ·300 | 30th | 14 | 0 | 0 | 5 | 6 | 11 | 5 | 2 | 13 | 9 | 3 | 5 | 14 | 4 | 3 | 7 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·400 | ·364 | ·382 | 87 | 89 | 88 | 7·2 | 6·3 | 6·8 | 2·647 | ·520 | 3rd | 13 | 0 | 0 | 6 | 2 | 12 | 0 | 2 | 5 | 14 | 6 | 5 | 5 | 3 | 3 | 17 |
| ·370 | ·373 | ·372 | 75 | 83 | 79 | 6·8 | 6·8 | 6·8 | 3·156 | ·611 | 10th, 11th | 14 | 0 | 0 | 3 | 5 | 15 | 0 | 2 | 9 | 6 | 4 | 14 | 4 | 4 | 7 | 10 |
| ·392 | ·373 | ·383 | 74 | 81 | 78 | 6·6 | 5·9 | 6·3 | 1·680 | ·480 | 3rd | 12 | 0 | 0 | 0 | 5 | 13 | 0 | 12 | 2 | 12 | 4 | 8 | 3 | 15 | 4 | 0 |
| ·463 | ·420 | ·442 | 82 | 93 | 88 | 7·1 | 5·7 | 6·4 | 2·990 | ·830 | 10th | 16 | 0 | 0 | 2 | 3 | 11 | 0 | 2 | 0 | 7 | 5 | 7 | 10 | 6 | 1 | 22 |
| ·371 | ·355 | ·363 | 79 | 91 | 85 | 7·1 | 6·1 | 6·6 | 6·050 | 1·790 | 10th | 19 | 0 | 1 | 1 | 3 | 12 | 0 | 1 | 1 | 5 | 4 | 7 | 4 | 15 | 1 | 22 |
| ·413 | ·394 | ·404 | 79 | 87 | 83 | 6·0 | 5·4 | 5·7 | 2·760 | ·570 | 18th | 18 | 0 | 0 | 2 | 2 | 6 | 0 | 1 | 13 | 6 | 4 | 4 | 10 | 8 | 4 | 10 |
| ·391 | ·380 | ·386 | 80 | 88 | 84 | 7·0 | 8·5 | 7·8 | 4·693 | 1·266 | 27th | 24 | 0 | 0 | 1 | 1 | 14 | 0 | 4 | 2 | 13 | 16 | 7 | 3 | 3 | 3 | 9 |
| ·396 | ·398 | ·397 | 78 | 85 | 82 | 7·5 | 7·0 | 7·3 | 5·058 | ·980 | 3rd | 19 | 0 | 0 | 4 | 0 | 12 | 0 | 0 | 3 | 9 | 10 | 9 | 4 | 11 | 7 | 7 |
| ·399 | ·395 | ·397 | 81 | 88 | 85 | 8·2 | 8·7 | 8·5 | 5·167 | ·965 | 27th | 22 | 0 | 0 | 1 | 0 | 19 | 0 | 3 | 3 | 3 | 10 | 10 | 7 | 3 | 7 | 14 |
| ·435 | ·414 | ·425 | 77 | 85 | 81 | 5·9 | 4·7 | 5·3 | 2·568 | ·900 | 29th | 12 | 0 | 0 | 2 | 4 | 6 | 0 | 2 | 5 | 8 | 3 | 4 | 10 | 11 | 6 | 11 |

TABLE C., JUNE.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of JUNE 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. Means of At 8 a.m. | Minima. | Maxima. | Min. and Max. combined. | Absolute Extremes. Minimum. | Date. | Maximum. | Date. | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. Total Fall in the Month. | Maximum Fall in One Day. | Date. | WEATHER. No. of Days of Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | WIND. No. of Observations of North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | ins. | ° | ° | ° | ° | ° |  | ° |  | in. | % |  | ins. | ins. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0. SCOTLAND, N. | Sumburgh Head | 29·921 | 50·1 | 44·7 | 54·5 | 49·6 | 38 | 6th | 68 | 28th | 0·323 | 89 | 7·1 | 0·87 | 0·44 | 8th | 11 | 0 | 0 | 0 | 4 | 9 | 0 | 10 | 8 | 3 | 6 | 1 | 0 | 1 | 1 | 0 |
|  | Thurso - | 29·928 | 55·6 | 47·4 | 62·3 | 54·9 | 36 | 15th | 81 | 27th | ·355 | 79 | 6·2 | 1·15 | 0·35 | 7th | 13 | 0 | 0 | 1 | 9 | 13 | 0 | 7 | 4 | 3 | 4 | 4 | 2 | 2 | 2 | 2 |
|  | Wick - | 29·906 | 54·5 | 45·0 | 61·2 | 53·1 | 33 | 7th, 15th | 79 | 26th | ·330 | 78 | 5·6 | 0·92 | 0·42 | 7th | 6 | 0 | 0 | 1 | 11 | 13 | 0 | 7 | 3 | 5 | 6 | 5 | 0 | 0 | 4 | 0 |
|  | Stornoway - | 29·866 | 54·9 | 47·3 | 58·2 | 52·8 | 39 | 2nd | 70 | 28th, 29th | ·353 | 83 | 5·0 | 2·43 | 0·73 | 27th | 10 | 0 | 0 | 2 | 10 | 8 | 6 | 2 | 3 | 5 | 4 | 7 | 4 | 0 | 2 | 3 |
| 1. SCOTLAND, E. | Nairn - | 29·905 | 55·3 | 48·1 | 63·5 | 55·8 | 35 | 5th | 83 | 28th | ·318 | 72 | 5·3 | 3·39 | 1·28 | 27th | 9 | 0 | 0 | 2 | 10 | 7 | 0 | 0 | 3 | 2 | 0 | 0 | 4 | 0 | 2 | 19 |
|  | Aberdeen - | 29·910 | 55·4 | 48·2 | 61·0 | 54·6 | 39 | 2nd, 15th | 76 | 26th | ·340 | 78 | 5·1 | 1·79 | 0·59 | 7th | 10 | 0 | 0 | 2 | 11 | 8 | 0 | 7 | 1 | 5 | 3 | 9 | 1 | 1 | 2 | 1 |
|  | Leith - | 29·888 | 57·3 | 48·2 | 64·8 | 56·5 | 37 | 5th | 80 | 28th | ·356 | 76 | 4·9 | 2·05 | 0·38 | 8th | 9 | 0 | 1 | 1 | 9 | 5 | 0 | 1 | 5 | 11 | 1 | 2 | 3 | 5 | 2 | 0 |
| 2. ENGLAND, N.E. | Shields - | 29·929 | 55·5 | 49·3 | 60·3 | 54·8 | 41 | 1st, 14th | 76 | 27th | ·347 | 79 | 6·2 | 1·69 | 0·42 | 11th | 14 | 0 | 0 | 0 | 8 | 15 | 2 | 5 | 4 | 1 | 3 | 4 | 2 | 6 | 2 | 3 |
|  | Scarborough - | 29·930 | 56·9 | 51·2 | 61·5 | 56·4 | 44 | 1st, 15th | 75 | 25th | ·384 | 83 | 6·0 | 3·52 | 1·88 | 23rd | 13 | 0 | 0 | 1 | 8 | 10 | 0 | 6 | 1 | 2 | 6 | 4 | 5 | 3 | 2 | 1 |
|  | York - | 29·938 | 57·1 | 49·4 | 65·3 | 57·9 | 40 | 2nd | 88 | 27th | ·373 | 79 | 5·9 | 3·05 | 0·70 | 9th | 12 | 0 | 0 | 2 | 9 | 12 | 0 | 5 | 5 | 1 | 2 | 8 | 4 | 2 | 3 | 0 |
| 3. ENGLAND, E. | Yarmouth - | 29·960 | 57·7 | 52·2 | 61·9 | 57·1 | 44 | 2nd | 70 | 26th, 27th | ·386 | 81 | 3·9 | 1·16 | 0·40 | 19th | 13 | 0 | 0 | 1 | 13 | 2 | 0 | 4 | 3 | 2 | 5 | 2 | 5 | 4 | 2 | 3 |
|  | Cambridge - | 29·961 | 59·2 | 49·0 | 71·0 | 60·0 | 37 | 2nd | 87 | 26th | ·413 | 83 | 6·2 | 3·04 | 0·88 | 13th | 13 | 0 | 0 | 5 | 8 | 12 | 0 | 5 | 4 | 1 | 1 | 9 | 8 | 1 | 1 | 0 |
| 4. MIDLAND COUNTIES. | Nottingham - | 29·949 | 61·3 | 50·9 | 73·3 | 62·1 | 39 | 6th | 95 | 25th | ·391 | 72 | 6·3 | 2·64 | 0·84 | 4th | 16 | 0 | 0 | 5 | 9 | 12 | 1 | 3 | 4 | 1 | 3 | 12 | 6 | 0 | 1 | 0 |
|  | Oxford - | 29·943 | 58·4 | 52·0 | 68·0 | 60·0 | 41 | 15th | 84 | 26th, 27th | ·383 | 78 | 6·1 | 2·04 | 0·38 | 16th | 12 | 0 | 0 | 4 | 12 | 15 | 0 | 2 | 2 | 1 | 0 | 8 | 7 | 3 | 0 | 7 |
| 5. ENGLAND, S. | London - | 29·953 | 61·0 | 51·9 | 71·0 | 61·5 | 42 | 2nd | 91 | 26th | ·399 | 75 | 6·3 | 3·49 | 0·98 | 30th | 16 | 0 | 2 | 8 | 7 | 12 | 2 | 1 | 2 | 3 | 2 | 5 | 9 | 5 | 0 | 3 |
|  | Dover - | 29·963 | 61·4 | 55·4 | 65·2 | 60·3 | 48 | 2nd | 77 | 26th, 27th | ·406 | 75 | 4·2 | 1·03 | 0·36 | 16th | 8 | 0 | 1 | 3 | 13 | 5 | 0 | 3 | 2 | 10 | 0 | 1 | 7 | 3 | 2 | 2 |
|  | Hurst Castle - | 29·943 | 61·2 | 54·6 | 67·1 | 60·9 | 49 | 1st, 16th 20th. | 82 | 27th | ·474 | 88 | 4·7 | 1·14 | 0·27 | 16th | 10 | 0 | 0 | 0 | 8 | 5 | 1 | 1 | 2 | 8 | 1 | 5 | 2 | 5 | 4 | 2 |
| 6. SCOTLAND, W. | Ardrossan - | 29·889 | 57·5 | 50·6 | 65·5 | 58·1 | 42 | 5th | 85 | 28th | ·351 | 74 | 5·4 | 2·69 | 0·83 | 7th | 10 | 0 | 0 | 2 | 11 | 9 | 0 | 1 | 11 | 1 | 4 | 4 | 4 | 1 | 3 | 1 |
| 7. ENGLAND, N.W. | Liverpool - | 29·907 | 57·7 | 52·6 | 65·1 | 58·9 | 45 | 6th | 85 | 27th | ·375 | 79 | 6·5 | 2·97 | 0·66 | 9th | 14 | 0 | 0 | 0 | 7 | 12 | 0 | 0 | 3 | 6 | 9 | 2 | 3 | 4 | 1 | 2 |
|  | Holyhead - | 29·918 | 57·5 | 53·3 | 65·6 | 59·5 | 47 | 1st | 83 | 27th | ·416 | 88 | 6·5 | 2·71 | 1·04 | 11th | 12 | 0 | 0 | 1 | 6 | 10 | 0 | 1 | 3 | 5 | 1 | 8 | 7 | 4 | 1 | 0 |
| 8. ENGLAND, S.W. | Pembroke - | 29·899 | 57·1 | 52·9 | 64·7 | 58·8 | 46 | 1st | 76 | 26th | ·413 | 88 | 6·0 | 3·44 | 0·70 | 27th | 11 | 0 | 0 | 2 | 6 | 9 | 2 | 0 | 1 | 4 | 6 | 4 | 3 | 4 | 2 | 6 |
|  | Portishead - | 29·918 | 59·4 | 51·2 | 68·9 | 60·1 | 44 | 15th | 88 | 26th | ·414 | 82 | 6·5 | 3·59 | 0·79 | 9th | 10 | 0 | 0 | 1 | 6 | 13 | 3 | 3 | 4 | 1 | 2 | 4 | 10 | 6 | 0 | 0 |
|  | Plymouth - | 29·928 | 60·4 | 54·0 | 66·8 | 60·4 | 45 | 1st | 82 | 27th | ·433 | 83 | 5·8 | 2·67 | 0·46 | 14th | 18 | 0 | 0 | 0 | 8 | 11 | 2 | 3 | 1 | 3 | 4 | 6 | 7 | 2 | 3 | 1 |
| 9. IRELAND, N. | Greencastle - | 29·859 | 57·3 | 49·3 | 65·4 | 57·4 | 40 | 6th | 77 | 23th | ·378 | 80 | 5·2 | 3·51 | 0·77 | 27th | 15 | 0 | 0 | 2 | 12 | 13 | 0 | 0 | 1 | 8 | 1 | 13 | 4 | 1 | 2 | 0 |
|  | Donaghadee - | 29·890 | 56·2 | 50·2 | 62·0 | 56·1 | 44 | 1st, 15th | 72 | 27th | ·395 | 87 | 4·6 | 2·27 | 0·54 | 11th | 14 | 0 | 0 | 1 | 12 | 8 | 0 | 2 | 5 | 6 | 4 | 4 | 6 | 2 | 1 | 0 |
| 10. IRELAND, S. | Kingstown - | 29·890 | 56·9 | 53·9 | 61·8 | 57·9 | 46 | 1st | 70 | 26th | ·384 | 83 | 6·5 | 3·29 | 0·71 | 10th | 21 | 0 | 0 | 3 | 3 | 11 | 0 | 1 | 0 | 6 | 6 | 6 | 0 | 3 | 7 | 1 |
|  | Valencia - | 29·871 | 57·0 | 50·7 | 61·7 | 56·2 | 45 | 19th, 21st | 67 | 30th | ·383 | 82 | 7·2 | 5·45 | 0·80 | 19th | 22 | 0 | 0 | 0 | 2 | 11 | 4 | 1 | 2 | 0 | 3 | 8 | 5 | 4 | 4 | 3 |
|  | Roche's Point - | 29·887 | 57·5 | 51·7 | 65·3 | 59·0 | 48 | 19th, 21st | 72 | 29th | ·373 | 80 | 6·5 | 8·05 | 1·75 | 27th | 17 | 0 | 0 | 2 | 4 | 9 | 0 | 4 | 1 | 0 | 5 | 7 | 5 | 3 | 5 | 0 |
| CHANNEL ISLANDS | Scilly - | 29·935 | 58·7 | 54·9 | 62·7 | 58·8 | 51 | 10th, 29th | 73 | 27th | ·438 | 89 | 8·0 | 3·22 | 0·72 | 10th | 18 | 0 | 0 | 3 | 1 | 14 | 1 | 2 | 1 | 1 | 2 | 5 | 7 | 6 | 3 | 3 |
|  | Jersey - | 29·949 | 60·4 | 54·8 | 65·9 | 60·4 | 49 | 16th | 84 | 26th | ·467 | 90 | 6·1 | 2·66 | 0·71 | 30th | 11 | 0 | 0 | 1 | 7 | 11 | 3 | 0 | 4 | 4 | 2 | 3 | 5 | 7 | 3 | 2 |

# MONTHLY WIND CHART FOR JUNE 1878.

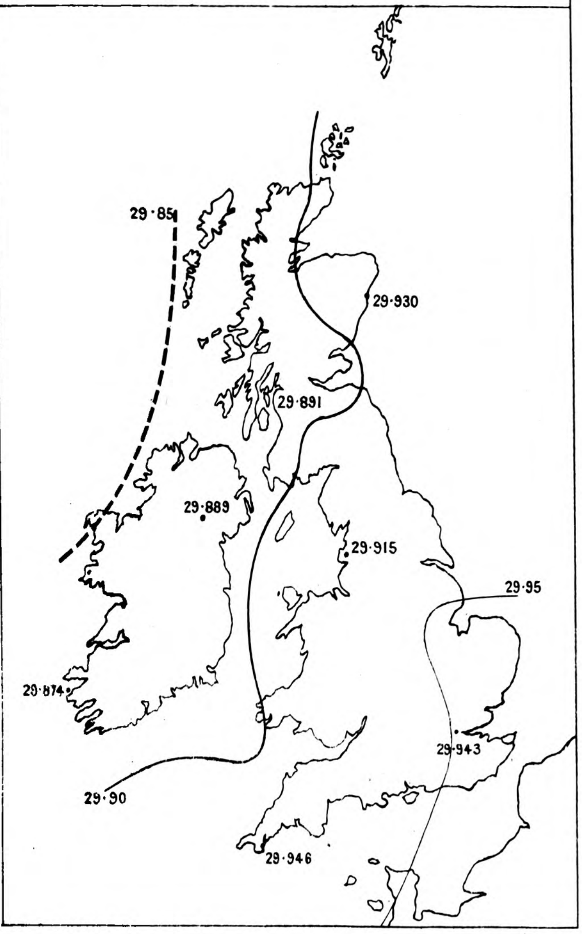

12
8
4
0
4
60
60
56
56
52
52
8
4
0

*To face p. 68.*

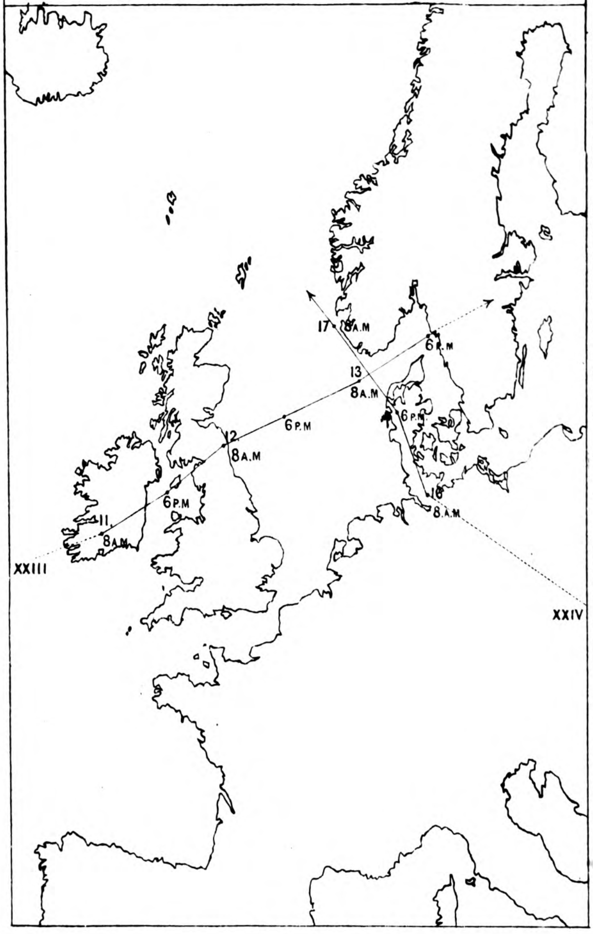
DANGERFIELD. LITH. 22, BEDFORD S$^T$ COVENT GARDEN. 13330

# MONTHLY WEATHER CHART JUNE 1878.

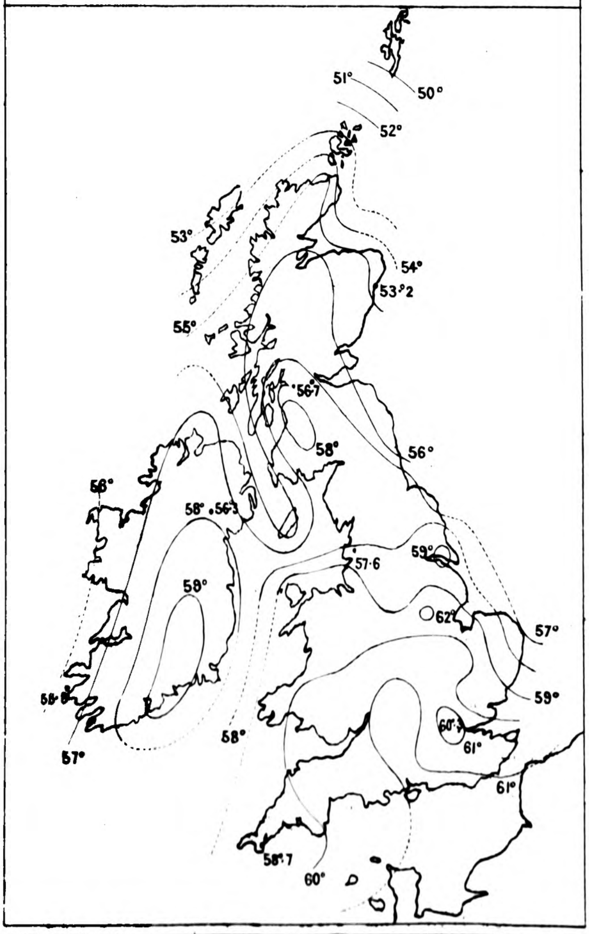
## 1. DISTRIBUTION OF MEAN PRESSURE


29·85
29·930
29·891
29·889
29·915
29·95
29·874
29·943
29·90
29·946

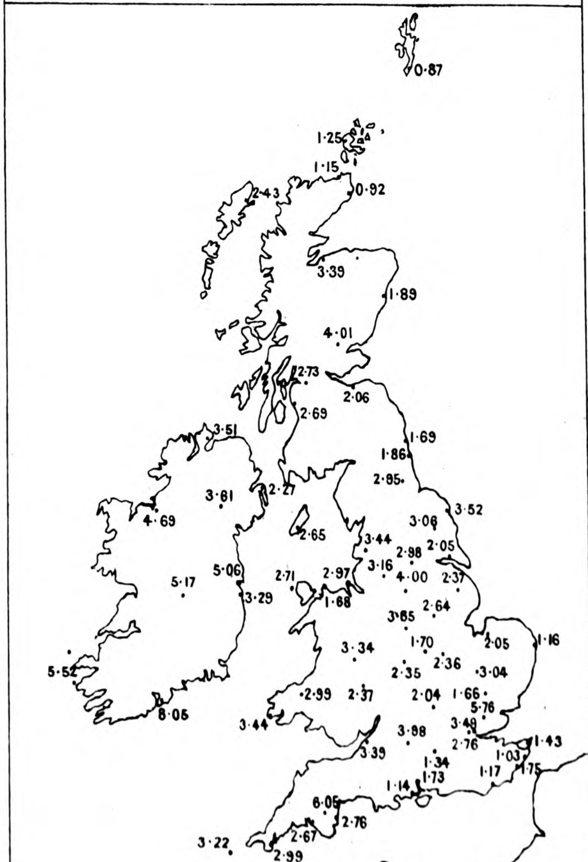
## 2. MOVEMENTS OF DEPRESSIONS.


17
8A.M
6P.M
13
8A.M
6P.M
12
6P.M
8A.M
6P.M
11
8A.M
XXIII
18
8A.M
XXIV

## 3. DISTRIBUTION OF MEAN TEMPERATURE


51°
50°
52°
53°
54°
53°2
55°
56°7
58°
56°
56°
58°
56°3
59°
57·6
58°
62°
57°
59°
58·8
60°3
61°
57°
58°
61°
58°7
60°

## 4. RAINFALL


0·87
1·25
1·15
2·43
0·92
3·39
1·89
4·01
2·73
2·06
2·69
3·51
1·69
1·86
2·85
3·81
2·27
4·69
3·52
3·06
2·65
3·44
2·98
2·05
5·06
3·16
5·17
2·71
2·97
4·00
2·37
3·29
1·68
2·64
3·65
1·70
2·05
1·16
3·34
2·36
5·52
2·35
3·04
2·99
2·37
2·04
1·66
5·76
8·05
3·44
3·49
3·98
2·76
1·43
3·39
1·03
1·34
1·73
1·17
1·75
1·14
6·05
2·76
2·67
3·22
2·99
2·66
2·57

*To follow Wind Chart for June.*

Dangerfield, Lith. 22, Bedford St. Covent Garden 13390

# PART III.

## SECTION I.

## GENERAL SUMMARY FOR THE QUARTER.

During the first part of this quarter the prevalent distribution of pressure was anticyclonic, and the movements of the barometer were generally only slight. In August, however, one or two important depressions were experienced, and throughout a considerable part of the month the weather was disturbed and unseasonable, while during September the barometer was very unsteady, and several serious disturbances were observed over or near to our Islands.

July 1st–23rd.—Throughout July the changes of pressure were generally slight and unimportant, anticyclonic conditions prevailing during the greater portion of the month. On the morning of the 1st a well-defined, but not very deep, depression lay over southern Sweden and the Baltic, while over south-western Europe the barometer was very uniform, although not very high, and light Northerly winds and dull weather prevailed over the greater part of the United Kingdom. A slight increase of pressure took place in the south-west, and by the 4th an anticyclone (No. X.) had become developed over the Bay of Biscay, the Northerly wind backing meanwhile to the Westward, with finer and warmer weather. During the next two or three days a couple of shallow depressions (of which No. XXV. was one) passed in an easterly direction to the northward of Scotland, and the centre of the anticyclone, which on the 5th lay over Brittany, moved away to the southward. On the 8th, however, it reappeared on our south-western coasts, and the wind veered for a few hours to North-west in Scotland and to North over England, backing again at the close of the day to West and South-west on our north-western coasts, with a falling barometer over the northern half of the kingdom, and with weather generally dull and cloudy. The anticyclone again moved a little to the southward, and during the next two days a shallow depression travelled slowly across the Northern Ocean and Scandinavia, disappearing eventually over eastern Russia. The barometer ceased to fall at the close of the 9th, and then remained tolerably steady for several hours, the rise beginning on the 11th at the northern stations, but not until the night of the 12th in the south-west, where it was delayed by the passage in a south-easterly direction of a very small depression, which, however, caused a good deal of rain to fall over the south of Ireland and England, and the north of France. On the 13th a cool, light Northerly wind, with fine weather, prevailed; the shallow depression was passing away over France, and another anticyclonic system (No. XI.) was becoming developed upon our western coasts, from whence it spread somewhat to the eastward, bringing with it a spell of fine hot weather to the British Islands, the thermometer rising as high as 91° at Nottingham on the 19th. The wind during this period was Westerly in Scotland, and Easterly over southern England. On the 23rd a rather deep depression passed over the extreme northern portion of the area embraced by these remarks, and a Northerly gale was experienced in the Gulf of Finland and the Baltic. At the same time a somewhat decided decrease of pressure began in the British Isles, and the weather became cooler and less settled.

July 24th–27th.—By the 24th a change had taken place in the general distribution of pressure over western Europe, and in the place of the anticyclone a belt of relatively low readings stretching from north-west to south-east covered the British Isles, the barometer being higher both over Scandinavia and over the Peninsula; the depression observed over Finland on the 23rd was disappearing over north-eastern Russia. The "hollow" moved slowly away in a north-easterly direction, and on the 27th the barometer was rising again at all our stations, with a general improvement in the weather, which during the interval had been cool, unsettled, and thundery, and with light variable winds, which gradually became Northerly as the trough of low readings passed away.

July 28th–August 8th.—On the 28th pressure had become remarkably uniform all over Europe. The barometer, however, continued to rise over the British Isles, and a new anticyclonic system (No. XII.) became developed upon the north-western coasts, from whence it slowly extended itself to the remainder of the United Kingdom, which remained entirely covered by it from the latter part of the 30th till the morning of the 1st, during which time light Northerly winds and fine dry weather prevailed. On the 1st the barometer fell very generally, except in Scotland, the fall being brisk at the south-western stations; the anticyclone moved to the Northern Ocean and Scandinavia, and the wind shifted to the Eastward and freshened, rising to a gale at some of the Channel stations. The centre of a large, but not very deep, depression (No. XXVI.) was observed next morning over southern France, from whence it moved slowly northward to our southern coasts till the 3rd, causing a continuous fall of pressure at all our stations. It then became partially filled up, and after moving to the westward, at the close of the 4th, eventually disappeared on the 7th to the north-westward of our Islands. It was accompanied by severe thunderstorms and by a good deal of rain, but as it travelled away, the wind, which had been fresh or strong from the Eastward, veered to the Southward and became light, and the weather improved. Pressure rose again very generally on the 7th, and continued to do so till the close of the following day, by which time the depression had disappeared and pressure had become high and fairly uniform over the greater part of western continental Europe. Westerly winds and fine weather were then general, but in the southwest the barometer commenced to fall again just before midnight, and the winds backed and freshened.

August 9th–17th.—The fall of the barometer just referred to was the precursor of a period of exceptionally wet and unsettled weather, in which several depressions passed across the United Kingdom, accompanied by strong winds and heavy rain, with frequent thunderstorms. The belt of high pressure which covered the greater part of central Europe on the morning of the 9th speedily disappeared, and the mercury fell steadily over the whole of western Europe. On the morning of the 10th the primary centre of a large disturbance, which was apparently travelling in a north-easterly direction, lay to the westward of the Hebrides, while the centre of a secondary system (No. XXVII.) was simultaneously observed at the mouth of Saint George's Channel. The latter centre passed north-eastwards across Great Britain to the North Sea, and eventually disappeared over the north of Norway on the 12th. The recovery of pressure which followed its passage was of a very temporary character, and on the 11th the barometer again fell quickly in the west, while the wind, which had become North-westerly or Northerly in that region, backed to South-west and South. A fresh depression was approaching our shores from the Atlantic, and in the evening the wind rose to a gale in the south-west, and freshened at all our stations, while rain fell generally. The centre of this new system passed along our western coasts, and at the close of the day disappeared over the ocean to the northward of Scotland. The rise of the barometer which followed in the south-west was again only of brief duration. A secondary disturbance (No. XXVIII.) crossed over Scotland early on the 13th,—its centre being observed to the eastward of Aberdeen at 8 a.m.,—the passage of which was accompanied in the extreme north by a very brisk fall of the mercury, and was succeeded by an equally rapid rise. In the south-west, however, a more important decrease, which began at about the same time as that in the north, continued all day. It was accompanied by an increase of wind, which in some places rose to the strength of a gale, and preceded the approach of another low-pressure area (No. XXVIIIA.), which travelled over southern England during the ensuing night. On the morning of the 14th the centre of this lay off the Norfolk coast, while the centre of the northern disturbance was still shown over the coast of Norway, and very heavy rain and squally weather were general over England and Ireland. Throughout the 14th pressure continued to increase, and both areas of low pressure travelled away towards the Baltic, in which region they appeared to coalesce on the 15th, and disappeared next day over Finland. On the 15th the barometer fell once more in the south-west, and during the following night the last important depression of this series (No. XXIX.) reached us, accompanied by thunderstorms and rain, the latter being extremely heavy in places. In the rear of this disturbance, however, pressure increased pretty steadily, and the weather improved, although the wind continued to blow freshly at our western stations. A slight check in the rise of the barometer occurred in Scotland on the 17th, due to a disturbance moving past our north-western coasts, but at too remote a distance to materially influence the wind-force in these Islands. At the close of that day the depression which was with us on the 16th was disappearing over the Gulf of Finland, and an area of high pressure had become developed over western France and the Bay of Biscay, and moderate to fresh Westerly winds, with rather cloudy weather, were general over Great Britain.

August 18th–September 1st.—The changes in pressure which took place during this interval were not large, but the weather was throughout unsettled, and a great deal of rain fell. The high pressure noticed on the 17th over France had shifted to the eastward by the following day, and in its place there appeared a small depression travelling northwards. On the morning of the 19th, its centre lay close to Lorient, but afterwards on reaching the Channel it became filled up; only moderate Easterly winds were experienced on our southern coasts, and light variable winds further north, but in the south of France the depression caused a strong Westerly gale. Simultaneously, however, with the appearance of this depression a larger one (No. XXX.) was observed over Finland moving to the westward, and in its front strong winds were experienced. The centre of this system was not far from Stockholm on the morning of the 20th, and a South-westerly gale was then reported from the southern Baltic, and a Northerly gale from the Gulf of Bothnia; in the course of the day, however, the track of the disturbance became changed, and it returned eastwards across Russia. A large depression approached us from the Atlantic on the 21st, when the barometer fell somewhat at Valencia, but the eastward progress of this system being apparently retarded by the relatively high pressure over the Continent, it remained for some time off our south-western coasts; the wind, however, freshened in that part of the kingdom, and on the 22nd it rose to a gale from South-east and East, while very heavy rain fell all over the south of England and Ireland. A small secondary depression (No. XXXI.) moved up the English Channel during the night of the 22nd, and fresh or strong Easterly winds became very general over the United Kingdom. The primary disturbance disappeared from our area in the course of the 23rd, but the smaller one remained over southern England till the 25th, after which it very slowly moved to the northward. The wind, however, had moderated on the 23rd, and light variable airs ensued, with heavy falls of rain all over southern England, where also some severe thunderstorms were experienced. The barometer continued low over the United Kingdom till the 27th, when a fresh depression appeared in the west, and Southerly to Westerly winds again became very general, and in the Channel blew freshly; this disturbance, which was only a shallow one, soon passed away in a north-easterly direction. Only a slight recovery of pressure followed, and on the 29th yet another system of low pressure (No. XXXII.) reached the mouth of the Channel and during the night passed eastwards along our southern coasts, where it was accompanied by strong gales and squalls from South veering to West, while in Scotland early on the 30th a moderate Easterly gale was experienced; heavy rain was general all over the British Isles. After traversing the North Sea to Scandinavia, this depression eventually disappeared over Finland. In its rear the barometer rose steadily and continuously and the wind became generally Northerly and decreased in force. On the 1st an anticyclonic system (No. XIV.) was becoming developed over the Bay of Biscay, and with this the wind backed and fell light, while the weather, although it remained cool, greatly improved.

September 2nd–14th.—A spell of quiet weather now ensued, and for several days the changes of pressure were gradual and unimportant. On the 2nd the winds at our extreme northern stations were affected by a depression moving apparently in a north-easterly direction, but far outside our coasts, and therefore over the greater part of the United Kingdom only light Southerly to Westerly airs were experienced. The anticyclone in the south-west moved north-eastwards, and quickly extended itself over the greater part of western and central Europe, and as with this movement gradients became very slight, calms and light airs, with generally fine weather prevailed over the British Isles for several days. Conditions were a little altered on the 9th by a slight depression which, travelling in an easterly direction, passed at some distance to the northward of Scotland, causing the barometer to fall somewhat at our northern stations, while the winds drew into West and freshened a little. Following upon the passage of this depression the highest pressures became temporarily transferred to our south-west coasts, but a few hours later they moved eastwards again to the Continent as before. On the 12th a rather deep system of low pressure was observed in the north of Sweden, and simultaneously a small local depression was noticed over the North Sea, and under the influence of the latter the wind became Northerly over the British Isles, and rose to a gale for a short time on the east coast. The general distribution of pressure now underwent another change, and throughout the remainder of this period the highest readings were found off our south-western coasts. A very general fall of the barometer commenced on the 13th, and during the ensuing night a depression travelling towards the Norwegian coast passed to the northward of Scotland, accentuating the fall of the mercury in that region; when the centre of the disturbance had passed away the barometer rose again temporarily, although further south the fall continued without interruption. By the close of the 14th, however, the decrease had again become general, and in the north very rapid. The Westerly wind which had prevailed for a few days was then backing and becoming stronger, with every indication of the approach of a gale.

September 15th–20th.—The depression (No. XXXIII.) whose advance was indicated by the rapid fall of the barometer just referred to proved to be a very deep one. At 8 a.m. on the 15th its centre was to the westward of the Hebrides, and was apparently moving slowly in a north-easterly direction, and strong Southerly winds and gales, with dull, cloudy weather, were general over the British Isles. The barometer ceased to fall in Ireland at about midday on the 15th, but in Scotland it fell throughout the day, and it was not until midnight that it began to rise at Aberdeen; the centre of the depression had by that time passed to the northward of Scotland and the wind had veered to West, but strong winds and gales continued to blow till the close of the 16th, the barometer meanwhile rising rapidly all over the country. Early on the 17th a small secondary depression passed near the north of Scotland, and caused the barometer in that district to fall rather rapidly for a few hours, while over the remainder of the United Kingdom a more gradual decrease of pressure set in, and continued till the following day. The barometer was then fairly high over the Bay of Biscay, and the depressions were disappearing over the ocean to the northward of our area, where there still lay a large band of low readings; fresh or strong winds were still general over the British Isles. Very little change took place in these conditions till the 20th, when a general rise of the barometer took place, and with this the band of low pressure moved further to the northward, and the high readings in the south extended up to our western coasts, with cold but finer weather.

September 21st–25th.—The improvement in the weather was only temporary, and the barometer continued very unsteady, while the general distribution of pressure underwent a complete change. The mercury began to fall at Valencia very early on the 21st, and before the day had closed the movement had become extended to all parts of the British Isles. Simultaneously, the area of high readings moved away from our western coasts, and travelling eastward across Germany, it eventually disappeared over Russia. The centre of a new depression (No. XXXIV.) lay off the Hebrides on the morning of the 22nd, and at the same time a subsidiary centre was noticed near Saint George's Channel, and the wind, which had backed to South, blew a gale at many of our western stations. The movement of this system was very slow, but it gradually passed in a south-easterly direction to the Netherlands and the north Germany, where it became filled up. Only a slight recovery of pressure ensued, and the barometer fell again on the 25th upon the approach of a large depression (No. XXXV.) towards our northern coasts; the fall was, however, only of brief duration, and a general recovery of pressure was again in progress before the day had closed. During the whole of this interval the weather had continued wet and unsettled.

September 26th–30th.—On the morning of the 26th a new anticyclonic system was beginning to show itself off our south-western coasts, while in the north the depression noticed on the 25th was passing away eastwards across Norway, and in the south-east a second depression, which had been first observed over the Gulf of Genoa, had advanced as far as the Adriatic. Over the British Isles a general and steady increase of pressure was taking place, with light or moderate winds and much finer weather. A new depression arrived off the coast of Norway on the 27th, but it did not cause any increase in the strength of the Westerly winds which were then general over the British Isles, and by the 29th it had travelled across Finland out of the area embraced by our observations. The anticyclone had meanwhile extended itself eastwards to Germany, so that on the 29th pressure had become relatively high and very uniform over the whole of central Europe, the North Sea, and the British Isles, and with this calms or light airs and wet weather had set in over the latter region. During the night the barometer again fell, mainly in the north of Ireland and England and in the south of Scotland, over which districts the centre of a shallow depression (No. XXXVI.) was observed at 8 a.m. on the 30th, and from whence it travelled eastward across the North Sea to the southern Baltic. The barometer then rose steadily all over the United Kingdom, and the weather improved, and at the close of the month the barometer was again highest over the Bay of Biscay and the Peninsula, while in the north a large area of low readings extended over the whole of Scandinavia, the Baltic, and eastern Russia.

## SECTION II.

### TABLE OF CYCLONIC SYSTEMS.—JULY—AUGUST, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XXV. July 5-6. | No. XXVI. August 3-8. |
|---|---|---|
| **Form** | Oval | Varying; sometimes oval, and at other times irregular. |
| **Size** | Small | Large |
| **Depth** | Shallow | Shallow |
| **Where first Observed** | Over Norway | Over France |
| **Direction of Motion** | Easterly | North-westerly at first, then northerly |
| **Rate of Motion** | Very slow | Slow |
| **Regions passed over by Steepest Gradients** | Norway and Sweden, but gradients were not steep. | United Kingdom |
| **Termination** | Passed away over Russia | Disappeared to the northward of Scotland |
| **Time under Observation** | Two days | Five days |
| **Accompanying Winds** | South-west to North-west, moderate to strong. North in Norway, West in Denmark, and South in the Baltic. | Northerly, veering to South-easterly and Southerly as the system moved across to Ireland, becoming South-westerly or Westerly as the centre went to the northward. |
| „ **Weather** | Generally rather dull and cloudy | Dull, wet, and very unsettled; with heavy thunderstorms in many places. |
| „ **Rainfall** | General in the north and west; heavy in north of Scotland, over an inch being recorded at Thurso and Wick. | Occurred at most places; large amounts were common, over an inch being reported from several stations, and 2·34 ins. were registered at Nottingham on morning of 7th. |
| **REMARKS** | This depression passed well to the northward of our Islands at the same time that an anticyclone lay over the Bay of Biscay and northern France. Gradients became steep, and the Westerly wind freshened a good deal, but did not reach the force of a gale. | This depression remained under observation in our area for a considerable time, but the accompanying gradients were at no time very steep, and the wind did not become very strong. |

## SECTION II.

### TABLE OF CYCLONIC SYSTEMS.—AUGUST, 1878.

| No. XXVII.<br>August 10-12. | No. XXVIII.<br>August 12-15. | No. XXVIIIA.<br>August 13-15. |
|---|---|---|
| Irregular and elongated, becoming somewhat circular. | Oval | Circular. |
| Large | Large | Moderate. |
| Shallow | Shallow | Shallow. |
| Mouth of St. George's Channel | West of the Hebrides | West of Ireland. |
| North-easterly | Easterly | Easterly till 14th, then north-easterly. |
| Slow | Slow | Moderate. |
| England and Scotland | Scotland and north of England | Southern England. |
| Disappeared to the northward of Norway | These two systems coalesced over the Baltic and passed away over Finland. | |
| Two days | Three days | Two days. |
| North to North-west in the west, South-west to South in east, changing to West or North-west generally; light to moderate, except in south-west, where strong winds were reported. | South-westerly in England, and South-easterly in north of Scotland, changing to North-westerly and Westerly. | North-westerly in Ireland, and Westerly gales in south of England. |
| Overcast and unsettled, but with occasional bright intervals. | Squally, wet and very unsettled over nearly the whole of western Europe, with thunderstorms in England. | |
| Very general, and in some cases heavy; at Holyhead, 0·83 in., at Pembroke, 0·74 in., and at Aberdeen, 0·77 in. were the largest amounts recorded. | Very general, and heavy in many places; the largest amounts were 1·26 in. at York, and 1·77 in. at Kingstown. | |
| This shallow system, which was subsidiary to a larger one which passed outside our north western coasts, disappeared apparently over the Northern Ocean, but at the same time another shallow centre of low pressure was noticed over Finland. | The second of these systems was a subsidiary depression which appeared off our south-western coasts about the time that the principal one reached the coast of Norway. The second system travelled more rapidly than the first, and on the morning of the 15th both lay over the Baltic, from whence the combined centre passed out of our area in a north-easterly direction. | |

## TABLE OF CYCLONIC SYSTEMS.—AUGUST, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XXIX.<br>August 15-17. | No. XXX.<br>August 19-20. |
|---|---|---|
| **Form** | Irregular, changing to oval | Elliptical |
| **Size** | Large | Large |
| **Depth** | Shallow | Shallow |
| **Where first Observed** | South-west of British Isles | Over Finland |
| **Direction of Motion** | North-easterly | Westerly at first, then south-easterly |
| **Rate of Motion** | Slow | Slow |
| **Regions passed over by Steepest Gradients** | England | Scandinavia |
| **Termination** | Disappeared over Russia | Moved away over Russia |
| **Time under Observation** | Two days | A day and a half |
| **Accompanying Winds** | East in the north, North in the west, West in the south, and South in the east; becoming North-westerly or Westerly generally. Moderate to strong. | North-east to North in Gulf of Bothnia, North on coast of Norway and in Denmark, South-west in the Baltic; strong to a gale. Light winds were recorded in the British Isles. |
| „ **Weather** | Very unsettled and rainy, with thunderstorms and hail at several places. | Moderately fine over the British Islands |
| „ **Rainfall** | Moderate amounts fell at most places, but an inch was exceeded at Aberdeen, Oxö, and The Helder, while at Kingstown 2·28 ins. were measured. | Rain was reported from Scotland, Ireland, France, and Scandinavia. 1·02 in. was measured at Hernösand. |
| **REMARKS** | The centre of this system embraced the greater part of England and of Scotland, and it moved slowly across the British Isles to the North Sea. The steepest gradients were observed in the rear of the depression. | This depression was accompanied by strong winds over the Baltic, but the weather of the British Isles was not affected. |

## TABLE OF CYCLONIC SYSTEMS.—AUGUST—SEPTEMBER, 1878.

| No. XXXI.<br>August 23-25. | No. XXXII.<br>August 29-September 1. | No. XXXIII.<br>September 15-18. |
|---|---|---|
| Varying; circular, then irregular | Circular | Uncertain, but probably oval. |
| Large | Large | Very large. |
| Shallow | Shallow | Deep. |
| South of England | Mouth of the Channel | To the west of the Hebrides. |
| Almost stationary for some time, then it moved a little to the eastward, and afterwards to the northward. | North-easterly | North-easterly. |
| Very slow | Slow | Slow. |
| North of England | France and the Channel | Scotland and Ireland. |
| Disappeared to the northward of Great Britain | Disappeared over Finland | Passed away to the northward of the British Islands. |
| Two days | Three days | Three days. |
| Strong Easterly over England and Ireland, light Easterly or South-easterly in Scotland, and South-westerly in France, becoming light and variable over British Isles. | North in the west, West in south, South in east, and East in the north; changing to North or North-west generally as the system passed over the North Sea. Strong; with gales in the south. | South-westerly or Southerly, veering to Westerly. strong generally, with gales in the west and north. |
| Overcast or cloudy at most stations, with fog or mist on the east and south coasts, and thunderstorms in England. | Very wet and squally, with thunder and lightning in some places. | Cloudy and unsettled, with moderately fine intervals. |
| Moderate amounts were recorded over the British Isles, but 1·10 in. fell at Brussels. | Rain fell all over the United Kingdom, 1·37 in. was recorded at Scilly. | Very general, and in many places rather heavy. |
| For a day or two before this depression appeared an area of low pressure had existed off our south-western coasts, where strong South-easterly winds had prevailed. | On the morning of the 30th the centre of this depression lay over Norfolk, but a large area of low pressure had spread itself over nearly the whole of Great Britain and in it two other small but distinct centres were observed. | The centre of this deep depression skirted our extreme north-west coasts, but gradients were steep all over the United Kingdom, and the system was accompanied by strong Southerly to Westerly gales. |

## TABLE OF CYCLONIC SYSTEMS.—SEPTEMBER, 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XXXIV.<br>September 22-24. | No. XXXV.<br>September 24-26. | No. XXXVI.<br>September 29-30. |
|---|---|---|---|
| **Form** | Oval | Uncertain; probably oval | Oval, becoming elongated. |
| **Size** | Large | Large | Large. |
| **Depth** | Shallow | Shallow | Shallow. |
| **Where first observed** | West of Scotland | Off the Hebrides | To the south-west of Ireland. |
| **Direction of Motion** | South-easterly | North-easterly | North-easterly. |
| **Rate of Motion** | Very slow | Very slow | Rapid. |
| **Regions passed over by steepest Gradients.** | England and the North Sea | The North Sea | Ireland and England. |
| **Termination** | Filled up over the Netherlands and North Germany. | Travelled across Norway to the Baltic. | Passed away across the Baltic. |
| **Time under Observation** | Two days | Two days | One day. |
| **Accompanying Winds** | South-east to East in Scotland; North-west to West in Ireland; Westerly to Southerly in England; moderate to strong, becoming light over England. | Westerly in Ireland and west of Scotland, Southerly in England and east of Scotland, and Easterly in Norway, changing to North-westerly or Westerly over our Islands, and South-easterly in Scandinavia. | Westerly in Ireland and south of England, Southerly or South-easterly on east coast, and North-easterly in Scotland, changing to Northerly, except in the south, where Westerly winds continued. |
| **„ Weather** | Dull and wet, with heavy thunderstorms in south of England; becoming fine in the rear of the depression. | Overcast or very cloudy, with fog or mist in some districts. | Very unsettled and overcast, with slight thunderstorms. Fog or mist occurred at several stations. |
| **„ Rainfall** | Rain fell at all our stations; 1·4 in. was recorded at Liverpool, 1·26 in. at Portishead, and 1·14 in. at Scilly. | Heavy in north of Scotland, slight or moderate amounts in other districts. 1·17 in. was measured at Sumburgh Head. | Very general, and heavy in some places. 1·0 in. was measured at Aberdeen, and 0·88 in. at Holyhead. |
| **REMARKS** | This shallow system was accompanied by a subsidiary centre, which appeared over south Ireland at the time when the principal centre lay off the Hebrides; the two subsequently became merged in each other over England. | This system was not accompanied by very strong winds, gradients being at no time steep. It was followed very quickly by another system, which appeared further to the northward, and passed across Scandinavia to Finland, but which did not affect our winds to any appreciable extent. | This shallow depression was not accompanied by very strong winds. The centre passed across the north of England. |

# TABLE OF GALES.

## No. 9. (Cyclonic System, No. XXXIII.)

| Stations. | Velocity 30-40 Miles per Hour. |  | Velocity Exceeding 40 Miles per Hour |  |  |  | Velocity Fell below 30 Miles per Hour. |  | Total No. of Hours the Vel. above 30 Mls. | Maximum Velocity. |  |  | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. |  | Hour. | Direction of Wind. | Velocity. |  |
| Sept. 15-18, 1878. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sandwick. | 3 a.m. (15th). | S.S.E. | — | — | — | — | 5 a.m. (15th). | S.S.E. | 2 | 4 a.m. (15th). | S.S.E. | 36 | — |
|  | 8 a.m. (15th). | S. by E. | 10 a.m. (15th). | S. by E. | 42 | 2 | 1 p.m. (15th). | W.S.W. | 5 | 10 a.m. (15th). | S. by E. | 42 | — |
|  | 7 p.m. (15th). | S.S.W. | 8 p.m. (15th). | S. | 40 | 1 | 10 p.m. (15th). | S.W. | 3 | 8 p.m. 15 p.m. | S. | 40 | — |
|  | — | — | 1 a.m. (16th). | W. by S. | 49 | 25 | 2 a.m. (17th). | W. | 25 | 6 a.m. (16th). | W. | 58 | — |
|  | 1 a.m. (18th). | W.S.W. | 3 a.m. (18th). | W. by S. | 45 | 11 | 8 p.m. (18th). | W.S.W. | 19 | 10 a.m. (18th). | W. by S. | 50 | — |
| Aberdeen. | 9 a.m. (15th). | S. by E. | 11 a.m. (15th). | S. by E. | 40 | 2 | 3 p.m. (15th). | W.S.W. | 6 | 11 a.m. (15th).<br>Noon (15th). | S. by E.<br>S.S.E. | 40 | — |
|  | 11 a.m. (16th). | W. by S. | — | — | — | — | 6 p.m. (16th). | W. by S. | 7 | 11 a.m. (16th). | W. by S. | 35 | — |
| Glasgow. | 8 a.m. (15th). | S. | 10 a.m. (15th). | S. | 45 | 3 | 2 p.m. (15th). | S.W. | 6 | Noon (15th). | S. | 48 | — |
|  | 7 p.m. (15th). | S.W. by W. | — | — | — | — | 2 a.m. (16th). | W. by S. | 7 | 8 p.m. (15th). | S.W. | 39 | — |
|  | 7 a.m. (16th). | W. | 10 a.m. (16th). | W. | 44 | 2 | 10 p.m. (16th). | W.S.W. | 15 | 11 a.m. (16th). | W. by N. | 46 | — |
|  | 3 a.m. (17th). | S.W. | — | — | — | — | 10 a.m. (17th). | W. by S. | 7 | 9 a.m. (17th). | W. by S. | 34 | — |
| Alnwick Castle. | 11 a.m. (15th). | S.S.W. | — | — | — | — | 4 p.m. (15th). | W. by S. | 5 | 1 p.m. (15th).<br>2 p.m. (15th). | S.S.W.<br>S. by W. | 39 | — |
|  | 7 p.m. (15th). | W.S.W. | 10 p.m. (15th). | S.W. by W. | 44 | 4 | 3 a.m. (16th). | W. by S. | 8 | 11 p.m. (15th). | S.W. | 50 | — |
|  | — | — | 4 a.m. (16th).<br>10 a.m. (16th). | W. by S.<br>W. by N. | 43<br>41 | 1<br>5 | 1 a.m (17th). | W. by S. | 21 | 4 a.m. (16th). | W. by S. | 43 | — |
|  | — | — | 2 a.m. (17th).<br>5 a.m. (17th). | W. by S.<br>W.S.W. | 43<br>42 | 1<br>3 | 10 a.m. (17th). | W. by S. | 8 | 2 a.m. (17th).<br>5 a.m. (17th).<br>7 a.m. (17th). | W. by S.<br>W.S.W.<br>W.S.W. | 43 | — |
|  | Noon (17th). | W.S.W. | 2 p.m. (17th).<br>5 p.m. (17th). | W.S.W.<br>W.S.W. | 45<br>41 | 2<br>1 | 3 a.m. (18th). | W. by S. | 15 | 2 p.m. (17th). | W.S.W. | 46 | Velocity also exceeded 30 miles per hour from 10 p.m. 18th till 6 a.m. 19th and at a few other hours on 19th. |
| Seaham | 9 a.m. (15th). | S. by W. | — | — | — | — | 11 a.m. (15th). | S. | 2 | 10 a.m. (15th). | S. by W. | 33 |  |
|  | Noon (15th). | S. by W. | 2 p.m. (15th). | S. by W. | 40 | 1 | 6 p.m. (15th). | S.W. | 6 | 2 p.m. (15th). | S. by W. | 40 |  |
|  | 8 a.m. (16th). | W. | — | — | — | — | Noon (16th). | W. by N. | 4 | 10 a.m. (16th). | W. | 35 | — |
| Stonyhurst. | 10 a.m. (15th). | S.S.E. | 2 p.m. (15th). | S.S.E. | 42 | 3 | 5 p.m. (15th). | S.W. by S. | 7 | 3 p.m. (15th). | S.S.E. | 43 | — |
|  | 1 a.m. (16th). | S.W. | — | — | — | — | 5 a.m. (16th). | S.W. by W. | 4 | 1 & 4 a.m. (16th). | S.W. | 31 | — |
|  | 6 a.m. (16th). | S.W. by W. | — | — | — | — | 4 p.m. (16th). | S.W. by W. | 10 | 7 a.m. (16th).<br>10 a.m. (16th). | S.W. by W.<br>W.S.W. | 35 | 31 miles were recorded at 9, 10, and 11 a.m. 19th. |

(continued).

## No. 9. (Cyclonic System, No. XXXIII.)—*continued.*

| Stations. | Velocity 30-40 Miles per Hour. | | Velocity Exceeding 40 Miles per Hour. | | | | Velocity Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | Maximum Velocity. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| Sept. 15-18, 1878. | | | | | | | | | | | | | |
| Holyhead. | Midt. (14th). | S.S.W. | 7 a.m. (15th).<br>7 p.m. (15th).<br>3 a.m. (16th).<br>11 a.m. (16th). | S.S.W.<br>W.<br>W.<br>W. by N. | 53<br>40<br>46<br>43 | 9<br>1<br>7<br>2 | 5 p.m. (16th). | W. | 41 | 2 p.m. (15th). | S.S.W. | 60 | Velocity was 33 miles at 6 p.m. and 30 miles at 7 p.m. on 16th. |
| | 1 a.m. (17th). | S.W.byW. | — | — | — | — | Noon (17th). | S.W. | 11 | 1 a.m. (17th).<br>3 a.m. (17th.) | S.W.byW.<br>S.W. | 36 | — |
| | 2 p.m. (17th). | S.W. by S. | — | — | — | — | 5 p.m. (17th). | S.W. by S. | 3 | 2 p.m. (17th). | S.W. by S. | 33 | — |
| | 6 p.m. (17th). | S.W. by S. | — | — | — | — | Midt. (17th). | S.W. | 6 | 9 & 10 p.m. (17th). | S.W. by S. | 35 | — |
| | 4 p.m. (18th). | W. by S. | — | — | — | — | 7 p.m. (18th). | W.N.W. | 3 | 4 p.m. (18th).<br>6 p.m. (18th). | W. by S.<br>W. by N. | 35 | — |
| | 8 p.m. (18th). | W. | — | — | — | — | 6 a.m (19th). | W. by S. | 10 | 1 a.m. (19th). | W. | 37 | — |
| Armagh | 10 a.m. (15th). | S. by W. | — | — | — | — | Noon (15th). | S.W.byW. | 2 | 11 a.m. (15th). | S. by W. | 34 | — |
| Valencia. | 11 p.m. (14th). | S.S.W. | Midnt. (14th).<br>4 p.m. (15th). | S.S.W.<br>W. by S. | 46<br>40 | 12<br>1 | 6 a.m. (16th). | W.N.W. | 31 | 9 a.m. (15th). | S.S.W. | 59 | — |
| | 11 p.m. (16th). | S.W. | — | — | — | — | 4 a.m. (17th). | S.W.byW. | 5 | 2&3 a.m. (17th). | S.W.byW. | 35 | — |
| | Noon (17th). | S.W. | — | — | — | — | 6 p.m. (17th). | S.W.byW. | 6 | 1&2 p.m. (17th). | S.W. by S. | 34 | — |
| | Noon (18th). | W. | — | — | — | — | 4 p.m. (18th). | W.N.W. | 4 | Noon (18th). | W. | 31 | — |
| Falmouth. | 11 a.m. (15th). | S.W. by S. | 1 p.m. (15th). | S.W. by S. | 40 | 1 | 7 p.m. (15th). | W. by S. | 8 | 1 p.m. (15th). | S.W. by S. | 40 | — |
| | Midt. (17th). | S.W. | — | — | — | — | 4 a.m. (18th). | S.W.byW. | 4 | 1 a.m. (18th). | S.W. | 35 | — |
| Kew | 5 p.m. (15th). | S.W. by S. | — | — | — | — | 10 p.m. (15th). | W. by S. | 5 | 7 p.m. (15th). | S.W. by S. | 34 | — |
| Yarmouth. | 11 a.m. (16th). | W. by N. | — | — | — | — | 3 p.m. (16th). | W. by N. | 4 | Noon (16th). | W. by N. | 35 | — |

## Table of Anticyclonic Systems, July 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. X.<br>July 3-13. | No. XI.<br>July 13-23. | No. XII.<br>July 29—August 7. |
|---|---|---|---|
| **Form** | Uncertain for greater part of the time, but oval when the centre was within our area. | Varying, but sometimes oval | Changing from irregular to oval, becoming irregular again. |
| **Size** | Large | Large | Large. |
| **Height** | Small. Maximum readings 30·3 ins. on 3rd to 5th and 7th to 9th. | Small. Maximum readings 30·4 ins. on 17th and 18th. | Small. Maximum readings 30·4 ins. on 31st and 4th. |
| **Where first Observed** | Over the Bay of Biscay | To the west of the British Islands | Off our north-western coasts. |
| **Direction of Motion** | At first northerly, then back again | Easterly then northerly | Easterly then northerly. |
| **Rate of Motion** | Very slow | Very slow | Very slow. |
| **Regions passed over** | South-western Europe and the Bay of Biscay. | The United Kingdom and Germany | Western Europe. |
| **Termination** | Dispersed over the Peninsula and southern Europe. | Disappeared off the coast of Norway | Passed away over Finland. |
| **Accompanying Wind** | Varied between North and West | Westerly in the north and Easterly in the south. | Variable, but usually from the North or East. |
| **„ Weather** | Generally fine, but rather cloudy | Very fine, bright and warm; temperature rose on the 19th to 91° at Nottingham and to 88° in London. At Rochefort the maximum reading was reported to be 100° on 18th and 19th. | Generally fine and dry. |
| **REMARKS** | The centre of this system kept nearly all the time to the south-westward of our coasts, moving during the earlier days towards the coast of Normandy, and then retiring again to the north of Spain. As it became dispersed a portion of it apparently moved eastwards towards the Mediterranean. | The centre of this anticyclone remained during most of the time over Ireland, while the system extended itself a good deal to the eastward over the Continent. Eventually a portion of it disappeared over southern Europe while another passed away to the northward of our Islands. | Upon the arrival of some shallow depressions on our south-western coasts this system began to break up and move away over northern Europe. |

## TABLE OF ANTICYCLONIC SYSTEMS.—AUGUST-SEPTEMBER 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XIII. August 7-10. | No XIV. August 31—September 6. |
|---|---|---|
| **Form** | Uncertain; probably an irregular ellipse | Oval |
| **Size** | Large | Large |
| **Height** | Small; maximum reading 30·2 ins. on 7th and 8th. | Small; maximum reading 30·3 ins. on 2nd to 4th |
| **Where first Observed** | Bay of Biscay | Over Spain |
| **Direction of Motion** | North-easterly | North-easterly |
| **Rate of Motion** | Slow | Very slow |
| **Regions passed over** | South-western Europe | Western Europe |
| **Termination** | Dispersed over Germany | Became dispersed over Russia |
| **Accompanying Wind** | Westerly, becoming Southerly as the system moved to the eastward. | South-westerly or Westerly, becoming Southerly, and then variable. |
| „ **Weather** | Fine and clear generally, but thunderstorms occurred at some places. Weather became very dull and unsettled when the system moved across to Germany. | Fine to fair in most places, but fog was experienced in some districts, and the sky was more or less overcast in Scotland. |
| **REMARKS** | This system was of very temporary duration, and moving up from the Peninsula, it soon became dispersed over Germany, | After the dispersion of this system, pressure continued for two or three days rather high and uniform over the greater part of western Europe. |

## TABLE OF ANTICYCLONIC SYSTEMS—SEPTEMBER, 1878.

| No. XV.<br>September 9-11. | No. XVI.<br>September 12-26. | No. XVII.<br>September 26-29. |
|---|---|---|
| Elliptical | Uncertain, but probably oval | Oval. |
| Large | Large | Large. |
| Small; maximum reading 30·3 ins. on 11th | Small; maximum reading 30·3 ins. on 12th and 17th. | Small. Maximum reading 30·2 ins. on 26th, 27th, and 28th. |
| Bay of Biscay | To the south-west of our Islands | Over France and Bay of Biscay. |
| North-easterly | Almost stationary till 22nd, then North-easterly | Easterly. |
| Slow | Very slow at first, then slow | Very slow. |
| South-western Europe | Western Europe | England, Ireland, France, and Germany. |
| Disappeared over Germany | Passed away to northern Europe | Passed off across southern Europe. |
| Westerly to North-westerly and Northerly, becoming very variable. | North-westerly to Westerly, becoming Southerly when the system moved across Germany. | Westerly to Southerly over British Isles. |
| Fine and bright generally, but fog or mist occurred in our eastern counties. | Weather over the British Isles was very unsettled during the greater part of this period, owing to depressions passing across them, but occasional intervals of fine and bright weather occurred. | Moderately fine, but fog, mist, or rain occurred at many places. |
| This system was broken up by a depression which reached north-western Europe; a portion of it disappeared over the Continent, while another moved to our south-western coasts, and is dealt with in the next table. | During the earlier days of this period the anticyclone moved southwards to the Peninsula, under the influence of a rather deep depression which reached our northern shores; it then reappeared over our Islands for a brief interval, after which the arrival of a series of depressions caused it to move away over Russia, where it finally disappeared. | This system had a very brief existence. The barometer was highest over France, but an arm of high pressure stretched up over England on the 29th, after which the system gave way and disappeared over southern Europe. |

## NOTES to accompany the ANTICYCLONIC TABLES.

July 1st–2nd.—The barometer was not very high over any part of Europe, but was higher over the Peninsula than elsewhere.

July 24th–28th.—Pressure was tolerably uniform over the greater part of Europe, but during most of the time it was higher both over Scandinavia and the Peninsula than it was over the intervening regions.

August 11th–30th.—The region of highest pressure varied somewhat during this period. At first it was found over the Peninsula, from whence it shifted to central Europe, and extended itself westwards over the British Isles; afterwards it moved back again to the south of Europe and the Mediterranean.

September 7th–8th.—During these two days pressure, though not high, was uniform over the greater part of Europe.

September 27th–30th.—Pressure was highest over southern Europe, but it was nowhere very high.

## SECTION III.

### Remarks for July 1878.

(*Tables A. to C., July, with Monthly Wind and Weather Charts.*)

*Wind.*—During the opening days of the month light to moderate winds, chiefly from the Northward, blew very generally. On the 4th, however, the direction became Westerly, but without much change in force, except that occasionally, and for a short time, it increased to a fresh breeze over small portions of the kingdom; and with the exception of a temporary shift to North at the close of the 7th, these conditions continued till the 12th. At the close of that day there ensued a short spell of variable airs which was followed by an equally brief interval of Northerly breezes, after which light anticyclonic airs, chiefly, however, from the Westward, and occasionally increasing in force to a moderate breeze, set in and continued for several days. Between the 19th and 24th, owing to a change in the position of the anticyclone, the prevalent direction of the wind was Easterly, but it still continued very light. On the 24th, however, a North-westerly breeze sprang up in the south-west, and gradually extending itself over the whole of the United Kingdom continued to blow until the 27th, when, after another brief interval of calms and variable airs, a Northerly breeze set in and continued till the 31st; at the close of that day the wind had veered to East over the Channel and southern England, and freshened a little, but in the north it was still very light.

The monthly chart shows that the prevailing wind for the whole month was from the North-west quadrant, but that at the mouth of the Channel North-east winds were rather frequent. In the north and west, however, the percentage of Easterly winds was very small.

*Pressure.*—The mean pressure for the month was rather above the average of the 20 years 1861–1880, while its distribution, as shown by the isobars on the monthly chart, agrees very well with the prevalent wind indicated by the wind chart, the mean readings decreasing from 30·1 inches in the south-west of Ireland to 29·9 inches at the Shetlands. The range of pressure was very slight, and at no station did it exceed eight tenths of an inch. The barometer never fell below 29·6 inches, and the highest point reached at any observatory was but little over 30·4 inches, the minima occurring as a rule, on the 24th or 25th, and the maxima either on the 18th or 31st.

*Movements of the Depressions.*—No important depressions reached the British Isles during the month; some shallow systems, however, passed across Scandinavia during its earlier days, and towards its close a rather large, but extremely shallow, area of low pressure slowly crossed the United Kingdom in a north-easterly direction. The prevalent distribution of pressure was anticyclonic, the centre of a large system of high pressure covering the British Isles for several days after it had moved northwards from the Bay of Biscay, in the neighbourhood of which it was first observed.

*Temperature.*—The mean temperature varied from about 64° in the south of England to 57° in the north of Scotland and about 53° in the Shetlands, and was therefore nearly normal over the whole kingdom. The maxima were generally recorded between the 18th and 22nd, when the temperature of 91° was reached at Nottingham, 89° at Durham and Uppingham, and 88° in London. The minima were most generally recorded on the 4th, but in parts of the west of England not until about the 13th. The greatest range of temperature was 50° at Nottingham and 47° at Audley End and Cambridge, but it exceeded 40° at many stations.

*Vapour Tension* varied from about ·38 inch in the north of Scotland to ·48 inch in the south-west of England, the mean value over the greater part of the kingdom being a little over four tenths of an inch. The percentage of *Relative Humidity* was about 80 as a rule, but on the coasts of the Irish Sea it was higher, and in the extreme north of Scotland it was 90.

*Rainfall.*—The total rainfall for the month was everywhere slight, although in some cases there were large daily falls, as at Nottingham, where 2·22 inches fell on the 24th, while the total for the month was but 2·6 inches. Falls of upwards of an inch in 24 hours were also recorded at several stations in the north of Scotland, and at some stations in the English Midlands and elsewhere, while at Parsonstown nearly 2 inches fell on the 23rd.

TABLE A.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of JULY 1878, together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE In the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation = 100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia - - | 30·098 | 29·778 | 25th, 4 p.m. | 30·443 | 18th, 9 a.m. | 0·665 | 62·0 | 51·8 | 25th, 5 a.m. | 80·1 | 22nd, 6 p.m. | 28·3 | ·462 | 83 | 1·976 |
| Armagh - - | ·080 | ·704 | 24th, 3 a.m. | ·436 | 18th, 11 a.m. | 0·732 | 60·1 | 46·8 | 29th, 5 a.m. | 75·4 | 22nd, 6 p.m. | 28·6 | ·422 | 81 | 0·110 |
| Glasgow - - | 30·007 | ·643 | 25th, 3 p.m. | ·393 | 31st, 7 a.m.<br>8 a.m. | 0·750 | 59·6 | 48·5 | 14th, 4 a.m.<br>31st, 5 a.m. | 78·9 | 21st, 5 p.m. | 30·4 | ·381 | 75 | 0·584 |
| Aberdeen - | 29·993 | ·616 | 6th, 4 a.m. | ·410 | 31st, 11 p.m. | 0·794 | 57·5 | 39·9 | 4th, 3 a.m. | 78·5 | 18th, 4 p.m. | 38·6 | ·367 | 78 | 0·530 |
| Falmouth - | 30·084 | ·770 | 24th, 4 a.m. | ·382 | 18th, 11 a.m. | 0·612 | 62·7 | 53·9 | 3rd, 1 a.m. | 77·8 | 22nd 3 p.m. | 23·9 | ·450 | 79 | 2·170 |
| Stonyhurst - | ·032 | ·649 | 25th, 5 a.m. | ·416 | 31st, 10 a.m. | 0·767 | 60·5 | 45·2 | 2nd, 4 a.m. | 83·1 | 21st, 4 p.m. | 37·9 | ·409 | 78 | 1·101 |
| Kew - - | 30·036 | 29·654 | 24th, 4 p.m. | 30·373 | 31st, Midt. | 0·719 | 63·1 | 47·1 | 4th, 4 a.m. | 81·8 | 19th, 2 p.m. | 34·7 | ·428 | 74 | 2·345 |

TABLE B., JULY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Means of | | | Absolute Extremes. | | | |
| | | | | | | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| 0. SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·957 | 55·3 | 53·9 | 54·6 | 51·5 | 58·7 | 55·1 | 46·3 | 3rd | 65·1 | 31st |
| 1. SCOTLAND, E. | Glenalmond | 30·014 | 59·3 | 56·2 | 57·8 | 50·3 | 67·9 | 59·1 | 41·3 | 31st | 80·2 | 20th |
| 2. ENGLAND, N.E. | Seaham | ·008 | 61·6 | 57·1 | 59·4 | 53·0 | 66·4 | 59·7 | 43·3 | 4th | 84·8 | 18th |
| | Durham* | ·007 | 63·6 | 56·0 | 59·8 | 52·4 | 71·1 | 61·8 | 40·4 | 4th | 88·9 | 19th |
| | Hull | ·022 | 63·5 | 60·6 | 62·1 | 54·7 | 72·0 | 63·4 | 45·0 | 4th | 87·5 | 20th |
| | Kelstern 𝕸 | ·033 | 61·7 | 55·9 | 58·8 | 51·8 | 68·5 | 60·2 | 41·0 | 4th | 81·6 | 18th |
| 3. ENGLAND, E. | Hillington 𝕸 | ·023 | 63·8 | 57·6 | 60·7 | 51·9 | 71·4 | 61·7 | 41·3 | 4th | 86·1 | 20th |
| | Audley End 𝕸 | ·025 | 63·5 | 57·9 | 60·7 | 52·1 | 70·6 | 61·4 | 36·5 | 4th | 83·9 | 19th |
| | Chigwell Row | ·070 | 63·1 | 61·3 | 62·2 | 55·0 | 69·2 | 62·1 | 45·8 | 4th | 80·0 | 18th |
| 4. MIDLAND COUNTIES. | Wakefield 𝕸 | ·038 | 62·7 | 59·7 | 61·2 | 54·0 | 69·4 | 61·7 | 40·0 | 4th | 85·2 | 20th |
| | Buxton 𝕸 | ·055 | 59·9 | 55·8 | 57·9 | 51·1 | 65·2 | 58·2 | 40·4 | 13th | 79·8 | 21st |
| | Cheadle 𝕸 | ·049 | 59·5 | 57·8 | 58·6 | 53·0 | 66·5 | 59·8 | 46·8 | 4th | 81·8 | 21st |
| | Leicester | ·037 | 63·0 | 61·8 | 62·4 | 53·8 | 69·5 | 61·7 | 42·9 | 4th | 84·0 | 21st |
| | Uppingham | ·036 | 63·3 | 57·8 | 60·6 | 52·1 | 71·3 | 61·7 | 44·3 | 4th | 88·8 | 19th |
| | Oscott | ·045 | 61·9 | 59·2 | 60·6 | 53·2 | 68·9 | 61·1 | 47·1 | 13th | 83·2 | 21st |
| | Churchstoke 𝕸 | ·078 | 60·8 | 58·4 | 59·6 | 51·7 | 68·4 | 60·1 | 42·0 | 28th | 81·8 | 21st |
| | Hereford 𝕸 | ·054 | 63·4 | 60·5 | 62·0 | 52·1 | 70·8 | 61·5 | 44·0 | 26th, 28th | 84·0 | 17th |
| 5. ENGLAND, S. | Marlborough 𝕸 | ·064 | 63·4 | 59·4 | 61·4 | 53·3 | 71·8 | 62·6 | 43·7 | 4th | 83·9 | 19th |
| | Strathfield Turgiss 𝕸 | ·054 | 65·4 | 59·7 | 62·6 | 51·7 | 75·0 | 63·4 | 42·1 | 30th | 86·8 | 19th |
| | Ramsgate 𝕸 | ·057 | 64·6 | 60·5 | 62·6 | 56·0 | 69·4 | 62·7 | 49·4 | 4th | 82·0 | 18th |
| | Folkestone | ·040 | 64·5 | 59·0 | 61·8 | 54·7 | 68·8 | 61·8 | 44·1 | 4th | 79·9 | 23rd |
| | Southampton† | ·052 | 66·4 | 61·3 | 63·9 | 55·7 | 72·2 | 64·0 | 48·1 | 4th | 82·8 | 20th |
| | Hastings | ·044 | 63·9 | 60·0 | 62·0 | 55·7 | 69·4 | 62·6 | 47·5 | 4th | 79·6 | 18th |
| 6. SCOTLAND, W. | —— | — | — | — | — | — | — | — | — | — | — | — |
| 7. ENGLAND, N.W. | Douglas | ·039 | 61·1 | 56·4 | 58·8 | 52·5 | 66·0 | 59·3 | 44·6 | 31st | 77·8 | 22nd |
| | Prestwich | ·036 | 61·5 | 58·7 | 60·1 | 53·5 | 67·5 | 60·5 | 44·7 | 13th | 83·7 | 21st |
| | Llandudno 𝕸 | ·057 | 63·5 | 59·8 | 61·7 | 55·7 | 71·7 | 63·7 | 46·9 | 13th | 83·6 | 23rd |
| 8. ENGLAND, S.W. | Caermarthen 𝕸 | ·063 | 65·4 | 59·5 | 62·5 | 55·1 | 73·0 | 64·1 | 45·0 | 28th | 85·4 | 21st |
| | Dartmoor 𝕸 | ·073 | 59·4 | 55·4 | 57·4 | 51·9 | 65·1 | 58·5 | 46·0 | 1st | 79·8 | 18th |
| | Babbacombe 𝕸 | ·075 | 63·8 | 60·1 | 62·0 | 56·0 | 69·2 | 62·6 | 51·0 | 1st, 4th | 78·3 | 18th |
| 9. IRELAND, N. | Markree Castle | ·079 | 61·3 | 57·7 | 59·5 | 52·8 | 67·6 | 60·2 | 40·4 | 28th | 80·9 | 22nd |
| 10. IRELAND, S. | Dublin | ·092 | 62·5 | 60·9 | 61·7 | 56·2 | 67·9 | 62·1 | 48·2 | 13th | 75·1 | 17th |
| | Parsonstown | ·100 | 62·9 | 59·7 | 61·3 | 56·0 | 70·1 | 63·1 | 45·9 | 13th | 83·3 | 22nd |
| CHANNEL | Jersey (St. Aubin's) | 30·105 | 66·3 | 61·0 | 63·7 | 58·0 | 70·2 | 64·1 | 53·2 | 3rd | 80·5 | 18th |

NOTE.—The stations marked thus 𝕸 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of JULY 1878.
corrected for Diurnal Range.

Latitude, beginning in each case with the Station lying furthest North.)

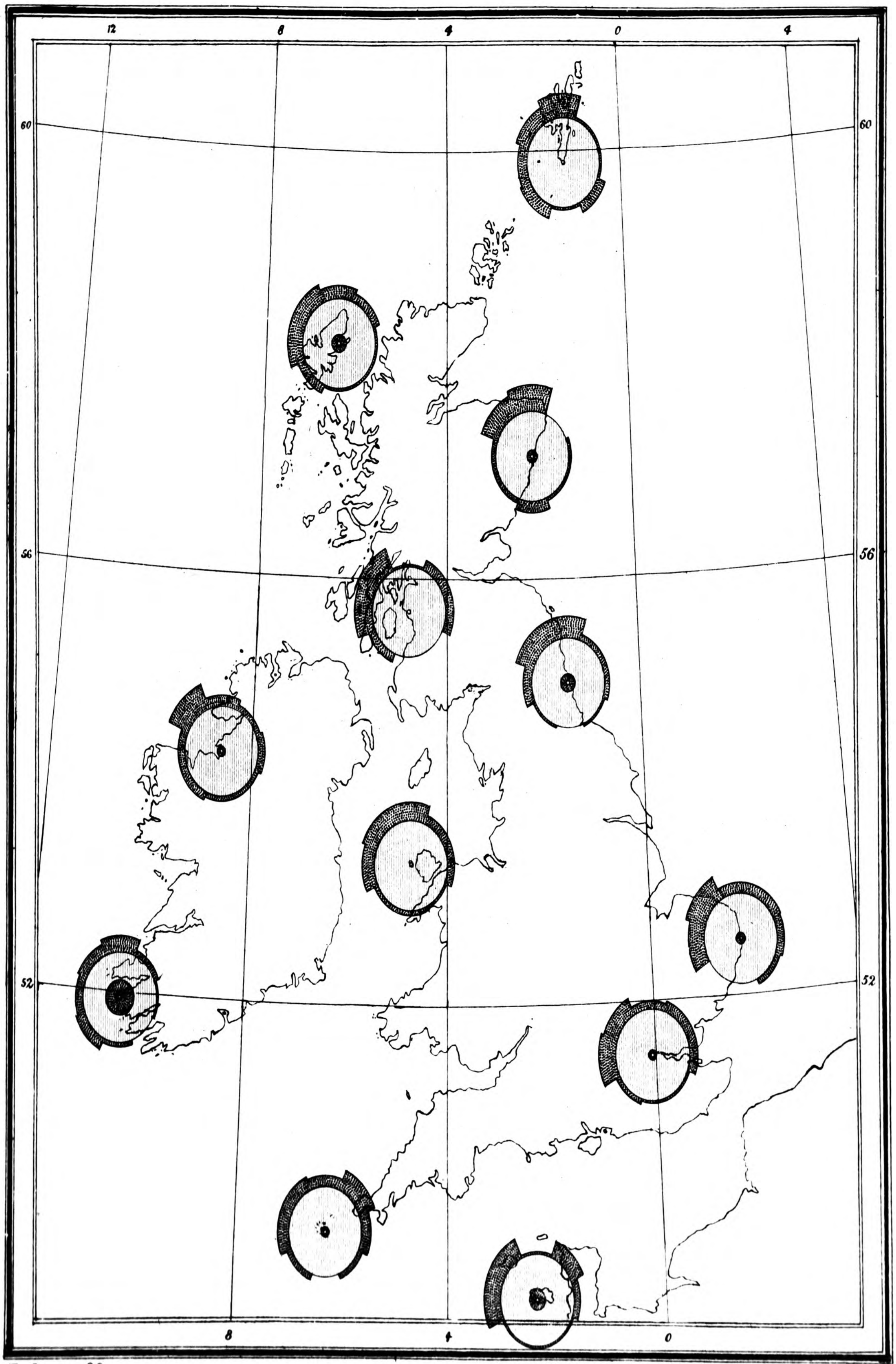
| TENSION OF VAPOUR. | | | RELATIVE HUMIDITY. | | | AMOUNT OF CLOUD (0 to 10). | | | RAINFALL. | | | WEATHER, No. of Days of | | | | | | | WIND, No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | °/o | °/o | °/o | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·369 | ·354 | ·362 | 84 | 86 | 85 | 8·8 | 7·9 | 8·4 | 2·520 | 1·150 | 5th | 12 | 0 | 3 | 0 | 1 | 20 | 0 | 2 | 0 | 2 | 6 | 2 | 18 | 13 | 13 | 6 |
| ·389 | ·404 | ·397 | 77 | 89 | 83 | 7·4 | 6·8 | 7·1 | 0·313 | ·125 | 23rd | 9 | 0 | 0 | 0 | 1 | 14 | 0 | 5 | 6 | 11 | 2 | 4 | 11 | 9 | 9 | 5 |
| ·423 | ·413 | ·418 | 78 | 88 | 83 | 6·7 | 5·1 | 5·9 | 0·424 | ·068 | 28th | 12 | 0 | 0 | 0 | 2 | 7 | 0 | 13 | 2 | 2 | 2 | 0 | 4 | 12 | 9 | 18 |
| ·443 | ·412 | ·428 | 75 | 90 | 82 | 7·9 | 5·8 | 6·9 | 0·185 | ·052 | 28th | 9 | 0 | 0 | 2 | 1 | 14 | 0 | 9 | 9 | 2 | 3 | 2 | 6 | 11 | 14 | 6 |
| ·443 | ·421 | ·432 | 75 | 80 | 78 | 6·0 | 6·0 | 6·0 | 0·800 | ·270 | 29th | 7 | 0 | 0 | 2 | 5 | 9 | 0 | 5 | 14 | 6 | 2 | 5 | 2 | 6 | 18 | 4 |
| ·445 | ·409 | ·427 | 81 | 91 | 86 | 7·7 | 6·1 | 6·9 | 1·198 | ·435 | 25th | 14 | 0 | 0 | 3 | 1 | 14 | 0 | 8 | 14 | 1 | 4 | 1 | 4 | 11 | 15 | 4 |
| ·456 | ·437 | ·447 | 77 | 91 | 84 | 7·5 | 7·9 | 7·7 | 0·814 | ·228 | 29th | 12 | 0 | 0 | 4 | 2 | 16 | 0 | 12 | 10 | 5 | 7 | 0 | 5 | 7 | 14 | 2 |
| ·436 | ·428 | ·432 | 74 | 88 | 81 | 7·4 | 5·5 | 6·5 | 0·480 | ·280 | 24th | 6 | 0 | 0 | 1 | 0 | 8 | 0 | 8 | 12 | 0 | 3 | 0 | 2 | 13 | 17 | 7 |
| ·433 | ·424 | ·429 | 75 | 78 | 77 | 7·3 | 6·6 | 7·0 | 0·740 | ·260 | 27th | 7 | 0 | 0 | 6 | 3 | 14 | 0 | 11 | 6 | 9 | 5 | 0 | 11 | 11 | 2 | 7 |
| ·406 | ·411 | ·409 | 71 | 80 | 75 | 7·0 | 5·5 | 6·3 | 0·740 | ·330 | 24th | 9 | 0 | 0 | 0 | 2 | 9 | 0 | 4 | 6 | 6 | 3 | 0 | 4 | 21 | 5 | 13 |
| ·408 | ·389 | ·399 | 79 | 87 | 83 | 6·5 | 6·5 | 6·5 | 1·735 | 1·110 | 24th | 11 | 0 | 0 | 0 | 2 | 10 | 0 | 4 | 8 | 8 | 3 | 0 | 5 | 4 | 28 | 2 |
| ·413 | ·406 | ·409 | 81 | 85 | 83 | 7·7 | 5·9 | 6·8 | 1·760 | ·980 | 24th | 9 | 0 | 0 | 2 | 1 | 12 | 1 | 3 | 4 | 13 | 4 | 2 | 4 | 9 | 23 | 0 |
| ·420 | ·418 | ·419 | 73 | 76 | 75 | 8·0 | 5·7 | 6·9 | 2·040 | 1·210 | 24th | 8 | 0 | 0 | 2 | 1 | 14 | 0 | 2 | 19 | 2 | 7 | 0 | 5 | 11 | 15 | 1 |
| ·446 | ·413 | ·430 | 77 | 86 | 81 | 8·5 | 6·4 | 7·5 | 1·264 | ·620 | 24th | 7 | 0 | 0 | 1 | 2 | 17 | 0 | 8 | 10 | 4 | 5 | 0 | 0 | 15 | 11 | 9 |
| ·436 | ·427 | ·432 | 79 | 85 | 82 | 8·0 | 5·1 | 6·6 | 0·660 | ·260 | 24th | 5 | 0 | 0 | 3 | 2 | 15 | 0 | 5 | 13 | 6 | 1 | 2 | 4 | 12 | 18 | 1 |
| ·429 | ·416 | ·423 | 80 | 84 | 82 | 6·6 | 5·2 | 5·9 | 1·203 | ·891 | 24th | 9 | 0 | 0 | 2 | 1 | 7 | 0 | 6 | 7 | 5 | 2 | 2 | 4 | 13 | 14 | 9 |
| ·420 | ·423 | ·422 | 72 | 80 | 76 | 7·2 | 5·0 | 6·1 | 0·507 | ·400 | 24th | 6 | 0 | 0 | 0 | 2 | 9 | 0 | 4 | 9 | 3 | 0 | 3 | 2 | 9 | 7 | 25 |
| ·457 | ·453 | ·455 | 78 | 89 | 84 | 7·2 | 4·9 | 6·1 | 2·606 | 1·160 | 1st | 9 | 0 | 0 | 4 | 2 | 10 | 0 | 3 | 7 | 3 | 0 | 1 | 2 | 8 | 2 | 36 |
| ·473 | ·453 | ·463 | 76 | 88 | 82 | 6·2 | 6·5 | 6·4 | 0·976 | ·379 | 24th | 7 | 0 | 0 | 4 | 5 | 8 | 0 | 1 | 3 | 8 | 8 | 1 | 18 | 3 | 11 | 9 |
| ·448 | ·450 | ·449 | 74 | 85 | 79 | 6·4 | 6·5 | 6·5 | 0·865 | ·270 | 29th | 7 | 0 | 0 | 0 | 3 | 11 | 0 | 2 | 18 | 5 | 1 | 1 | 13 | 8 | 9 | 5 |
| ·469 | ·452 | ·461 | 77 | 90 | 84 | 6·4 | 5·8 | 6·1 | 0·730 | ·330 | 29th | 10 | 0 | 0 | 2 | 3 | 10 | 0 | 13 | 10 | 11 | 0 | 3 | 9 | 8 | 4 | 4 |
| ·423 | ·441 | ·432 | 65 | 81 | 73 | 6·1 | 4·7 | 5·4 | 1·623 | ·910 | 22nd | 10 | 0 | 1 | 1 | 7 | 8 | 0 | 8 | 17 | 4 | 0 | 1 | 13 | 8 | 9 | 2 |
| ·451 | ·448 | ·450 | 76 | 86 | 81 | 5·5 | 5·2 | 5·4 | 0·820 | ·370 | 26th | 12 | 0 | 0 | 2 | 8 | 9 | 0 | 7 | 19 | 5 | 1 | 5 | 8 | 11 | 2 | 4 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·450 | ·420 | ·435 | 84 | 91 | 87 | 6·0 | 4·5 | 5·3 | 0·760 | ·575 | 24th | 6 | 0 | 0 | 1 | 4 | 8 | 0 | 5 | 1 | 7 | 3 | 0 | 3 | 13 | 19 | 11 |
| ·418 | ·421 | ·420 | 76 | 85 | 81 | 7·5 | 6·3 | 6·9 | 0·785 | ·310 | 24th | 7 | 0 | 0 | 1 | 3 | 13 | 0 | 2 | 9 | 4 | 2 | 3 | 3 | 21 | 10 | 8 |
| ·431 | ·424 | ·428 | 74 | 82 | 78 | 6·8 | 6·1 | 6·5 | 1·185 | 1·048 | 24th | 4 | 0 | 0 | 1 | 7 | 17 | 0 | 10 | 6 | 8 | 1 | 2 | 3 | 17 | 15 | 0 |
| ·485 | ·458 | ·472 | 78 | 89 | 84 | 6·1 | 4·8 | 5·5 | 1·950 | 1·030 | 23rd | 10 | 0 | 0 | 3 | 5 | 10 | 0 | 12 | 6 | 5 | 1 | 0 | 4 | 8 | 7 | 19 |
| ·426 | ·401 | ·414 | 84 | 91 | 87 | 7·1 | 4·6 | 5·9 | 2·410 | ·680 | 12th | 15 | 0 | 0 | 1 | 3 | 10 | 0 | 9 | 5 | 9 | 0 | 1 | 1 | 13 | 7 | 17 |
| ·447 | ·441 | ·444 | 76 | 84 | 80 | 6·5 | 5·1 | 5·8 | 1·510 | ·570 | 12th | 9 | 0 | 0 | 3 | 5 | 11 | 0 | 5 | 10 | 10 | 1 | 0 | 4 | 14 | 13 | 5 |
| ·434 | ·417 | ·426 | 80 | 87 | 83 | 7·8 | 7·3 | 7·6 | 1·141 | ·282 | 26th | 18 | 0 | 0 | 1 | 2 | 15 | 0 | 8 | 3 | 4 | 3 | 3 | 8 | 5 | 17 | 11 |
| ·431 | ·445 | ·438 | 76 | 83 | 79 | 6·5 | 5·5 | 6·0 | 0·650 | ·324 | 26th | 9 | 0 | 0 | 2 | 3 | 8 | 0 | 5 | 6 | 11 | 3 | 0 | 1 | 16 | 13 | 7 |
| ·442 | ·448 | ·445 | 77 | 87 | 82 | 7·4 | 6·8 | 7·1 | 2·559 | 1·977 | 23rd | 12 | 0 | 0 | 2 | 3 | 16 | 0 | 7 | 7 | 3 | 2 | 3 | 6 | 10 | 14 | 10 |
| ·478 | ·459 | ·469 | 74 | 86 | 80 | 5·5 | 4·9 | 5·2 | 1·826 | ·727 | 1st | 14 | 0 | 0 | 3 | 8 | 9 | 0 | 4 | 14 | 5 | 1 | 1 | 9 | 13 | 7 | 8 |

## TABLE C., JULY.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS during the Month of JULY 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. | | | | | | | | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. | | | WEATHER, No. of Days of | | | | | | | WIND, No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Means of | | | | Absolute Extremes. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | At 8 a.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. | | | | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| **0. SCOTLAND, N.** | Sumburgh Head | 29·916 | 53·2 | 48·7 | 57·2 | 53·0 | 42 | 3rd | 62 | 25th | 0·377 | 93 | 7·9 | 1·70 | 0·45 | 4th | 20 | 0 | 0 | 0 | 4 | 17 | 0 | 10 | 1 | 1 | 3 | 1 | 5 | 4 | 6 | 0 |
| | Thurso | 29·963 | 55·9 | 51·5 | 62·5 | 57·0 | 45 | 31st | 70 | 17th, 18th | ·400 | 90 | 9·0 | 2·90 | 1·20 | 4th | 15 | 0 | 0 | 0 | 0 | 24 | 0 | 3 | 0 | 0 | 2 | 1 | 2 | 10 | 9 | 4 |
| | Wick | 29·963 | 56·5 | 50·2 | 63·4 | 56·8 | 41 | 3rd | 76 | 18th | ·398 | 87 | 8·5 | 2·15 | 1·05 | 4th | 10 | 0 | 0 | 0 | 3 | 24 | 0 | 6 | 0 | 0 | 3 | 2 | 3 | 5 | 10 | 2 |
| | Stornoway | 29·962 | 57·4 | 51·7 | 61·6 | 56·7 | 45 | 31st | 70 | 24th | ·415 | 88 | 7·9 | 1·62 | 0·55 | 4th | 10 | 0 | 0 | 1 | 2 | 15 | 2 | 5 | 3 | 1 | 1 | 1 | 3 | 7 | 7 | 3 |
| **1. SCOTLAND, E.** | Nairn | 29·983 | 57·8 | 52·7 | 66·5 | 59·6 | 43 | 4th | 76 | 17th, 18th | ·372 | 78 | 6·1 | 1·03 | 0·61 | 25th | 6 | 0 | 0 | 1 | 9 | 14 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 9 | 8 | 12 |
| | Aberdeen | 29·975 | 58·6 | 52·4 | 65·7 | 59·1 | 40 | 4th | 81 | 18th | ·382 | 78 | 6·9 | 0·50 | 0·12 | 4th | 12 | 0 | 0 | 0 | 6 | 14 | 0 | 11 | 0 | 1 | 1 | 4 | 2 | 2 | 9 | 1 |
| | Leith | 29·980 | 60·1 | 53·3 | 69·4 | 61·4 | 44 | 31st | 83 | 20th | ·411 | 79 | 6·0 | 0·52 | 0·18 | 23rd | 8 | 0 | 0 | 0 | 3 | 7 | 0 | 0 | 3 | 7 | 1 | 0 | 2 | 10 | 8 | 0 |
| **2. ENGLAND, N.E.** | Shields | 30·008 | 58·8 | 53·5 | 64·9 | 59·2 | 44 | 4th | 82 | 18th | ·422 | 85 | 6·9 | 0·55 | 0·17 | 7th | 10 | 0 | 0 | 0 | 4 | 13 | 3 | 9 | 2 | 2 | 1 | 0 | 1 | 4 | 9 | 3 |
| | Scarborough | 30·011 | 61·2 | 55·9 | 65·7 | 60·8 | 46 | 4th | 81 | 20th | ·417 | 78 | 7·4 | 0·32 | 0·14 | 29th | 7 | 0 | 0 | 1 | 4 | 15 | 0 | 11 | 2 | 2 | 2 | 0 | 3 | 6 | 5 | 0 |
| | York | 30·025 | 60·5 | 53·5 | 70·6 | 62·1 | 41 | 4th, 28th | 85 | 18th | ·423 | 80 | 6·8 | 1·67 | 0·58 | 27th | 10 | 0 | 0 | 3 | 7 | 16 | 0 | 9 | 2 | 1 | 0 | 2 | 1 | 9 | 7 | 0 |
| **3. ENGLAND, E.** | Yarmouth | 30·018 | 61·2 | 54·9 | 65·6 | 60·3 | 44 | 4th | 74 | 6th | ·431 | 80 | 4·6 | 1·82 | 0·80 | 25th | 11 | 0 | 0 | 1 | 10 | 2 | 0 | 4 | 4 | 3 | 2 | 0 | 0 | 7 | 10 | 1 |
| | Cambridge | 30·033 | 61·6 | 52·4 | 72·3 | 62·4 | 39 | 4th | 86 | 19th | ·444 | 81 | 7·0 | 0·90 | 0·69 | 22nd | 6 | 0 | 0 | 1 | 6 | 17 | 0 | 11 | 3 | 1 | 1 | 0 | 3 | 4 | 6 | 2 |
| **4. MIDLAND COUNTIES.** | Nottingham | 30·044 | 64·1 | 53·4 | 75·6 | 64·5 | 41 | 4th | 91 | 19th | ·457 | 76 | 7·3 | 2·60 | 2·22 | 24th | 7 | 0 | 0 | 2 | 4 | 17 | 0 | 5 | 2 | 1 | 1 | 2 | 7 | 6 | 5 | 2 |
| | Oxford | 30·045 | 60·8 | 54·6 | 70·4 | 62·5 | 46 | 4th | 83 | 19th | ·430 | 81 | 6·5 | 1·16 | 0·71 | 24th | 6 | 0 | 0 | 2 | 11 | 17 | 0 | 6 | 5 | 2 | 1 | 2 | 2 | 7 | 5 | 1 |
| **5. ENGLAND, S.** | London | 30·041 | 62·7 | 54·8 | 73·9 | 64·4 | 45 | 4th | 88 | 19th | ·433 | 77 | 5·9 | 0·57 | 0·20 | 26th | 9 | 0 | 0 | 3 | 10 | 12 | 0 | 3 | 4 | 4 | 1 | 1 | 2 | 8 | 7 | 1 |
| | Dover | 30·030 | 63·9 | 58·3 | 68·4 | 63·4 | 47 | 4th | 74 | 20th, 21st, 22nd. | ·441 | 75 | 3·9 | 0·65 | 0·26 | 27th | 11 | 0 | 0 | 1 | 12 | 3 | 0 | 5 | 3 | 6 | 0 | 0 | 5 | 4 | 6 | 2 |
| | Hurst Castle | 30·042 | 64·3 | 56·9 | 71·4 | 64·2 | 50 | 4th, 28th | 81 | 18th | ·511 | 85 | 3·9 | 1·26 | 0·46 | 12th | 7 | 0 | 0 | 0 | 15 | 4 | 0 | 5 | 7 | 6 | 1 | 0 | 1 | 6 | 5 | 0 |
| **6. SCOTLAND, W.** | Ardrossan | 30·014 | 59·3 | 54·8 | 66·8 | 60·8 | 48 | 28th, 29th | 79 | 22nd | ·406 | 81 | 6·8 | 0·74 | 0·26 | 5th | 11 | 0 | 0 | 1 | 5 | 13 | 1 | 1 | 4 | 4 | 0 | 0 | 3 | 9 | 10 | 0 |
| **7. ENGLAND N.W.** | Liverpool | 30·044 | 60·8 | 56·3 | 67·0 | 61·7 | 52 | 2nd, 3rd, 4th, 9th. | 84 | 21st | ·428 | 81 | 7·3 | 1·07 | 0·80 | 24th | 5 | 0 | 0 | 0 | 5 | 15 | 0 | 0 | 1 | 4 | 3 | 0 | 2 | 11 | 6 | 4 |
| | Holyhead | 30·062 | 59·9 | 56·8 | 66·1 | 61·5 | 52 | 2nd | 78 | 22nd | ·445 | 87 | 5·5 | 0·50 | 0·30 | 24th | 5 | 0 | 0 | 0 | 11 | 12 | 0 | 7 | 3 | 3 | 1 | 2 | 2 | 6 | 7 | 0 |
| **8. ENGLAND, S.W.** | Pembroke | 30·067 | 60·9 | 57·5 | 66·9 | 62·2 | 52 | 14th | 80 | 19th | ·440 | 83 | 4·8 | 1·74 | 0·70 | 12th | 11 | 0 | 0 | 3 | 11 | 9 | 0 | 5 | 5 | 5 | 2 | 0 | 2 | 3 | 5 | 4 |
| | Portishead | 30·047 | 61·8 | 55·5 | 72·5 | 64·0 | 48 | 28th | 85 | 21st | ·459 | 83 | 6·4 | 2·74 | 0·85 | 1st | 10 | 0 | 0 | 4 | 7 | 14 | 0 | 7 | 3 | 2 | 1 | 1 | 5 | 3 | 9 | 0 |
| | Plymouth | 30·065 | 63·6 | 57·5 | 71·1 | 64·3 | 51 | 4th | 81 | 18th, 19th | ·485 | 83 | 6·3 | 1·59 | 0·71 | 12th | 9 | 0 | 0 | 2 | 9 | 16 | 1 | 4 | 6 | 4 | 1 | 1 | 1 | 5 | 8 | 1 |
| **9. IRELAND, N.** | Greencastle | 30·035 | 59·4 | 53·0 | 66·4 | 59·7 | 45 | 29th | 80 | 23rd | ·428 | 85 | 7·6 | 0·74 | 0·11 | 5th | 16 | 0 | 0 | 0 | 6 | 21 | 0 | 7 | 1 | 1 | 1 | 3 | 3 | 11 | 4 | 0 |
| | Donaghadee | 30·051 | 59·6 | 54·2 | 64·9 | 59·6 | 47 | 28th | 73 | 17th | ·437 | 86 | 5·4 | 1·81 | 0·93 | 24th | 6 | 0 | 0 | 0 | 10 | 8 | 1 | 7 | 6 | 3 | 2 | 0 | 2 | 6 | 5 | 0 |
| **10. IRELAND, S.** | Kingstown | 30·082 | 59·9 | 56·8 | 66·2 | 61·5 | 53 | 3rd, 13th, 27th, 29th. | 72 | 17th, 18th | ·421 | 82 | 5·7 | 0·44 | 0·11 | 24th, 26th | 7 | 0 | 0 | 0 | 6 | 6 | 0 | 4 | 0 | 2 | 2 | 1 | 1 | 9 | 11 | 1 |
| | Valencia | 30·105 | 62·2 | 55·9 | 68·0 | 62·0 | 50 | 4th, 25th, 29th. | 80 | 22nd | ·456 | 82 | 6·3 | 1·90 | 0·64 | 27th | 12 | 0 | 0 | 2 | 9 | 14 | 1 | 6 | 2 | 1 | 0 | 2 | 4 | 3 | 4 | 9 |
| | Roche's Point | 30·098 | 61·5 | 56·5 | 70·6 | 63·6 | 51 | 5th | 80 | 22nd | ·425 | 79 | 5·0 | 2·16 | 0·70 | 27th | 8 | 0 | 0 | 0 | 9 | 5 | 0 | 11 | 4 | 4 | 1 | 0 | 3 | 2 | 6 | 0 |
| **CHANNEL ISLANDS** | Scilly | 30·086 | 62·7 | 59·4 | 66·3 | 62·9 | 55 | 4th | 72 | 18th, 19th, 20th, 22nd, 23rd. | ·486 | 86 | 6·5 | 2·07 | 0·57 | 23rd | 13 | 0 | 0 | 0 | 6 | 11 | 2 | 4 | 8 | 4 | 2 | 0 | 2 | 5 | 5 | 1 |
| | Jersey | 30·048 | 63·3 | 57·8 | 68·1 | 63·0 | 53 | 3rd, 4th | 80 | 18th | ·492 | 84 | 5·0 | 1·89 | 0·71 | 1st | 12 | 0 | 0 | 3 | 1 | 9 | 1 | 1 | 6 | 2 | 1 | 1 | 1 | 8 | 8 | 3 |

# MONTHLY WIND CHART FOR JULY 1878.

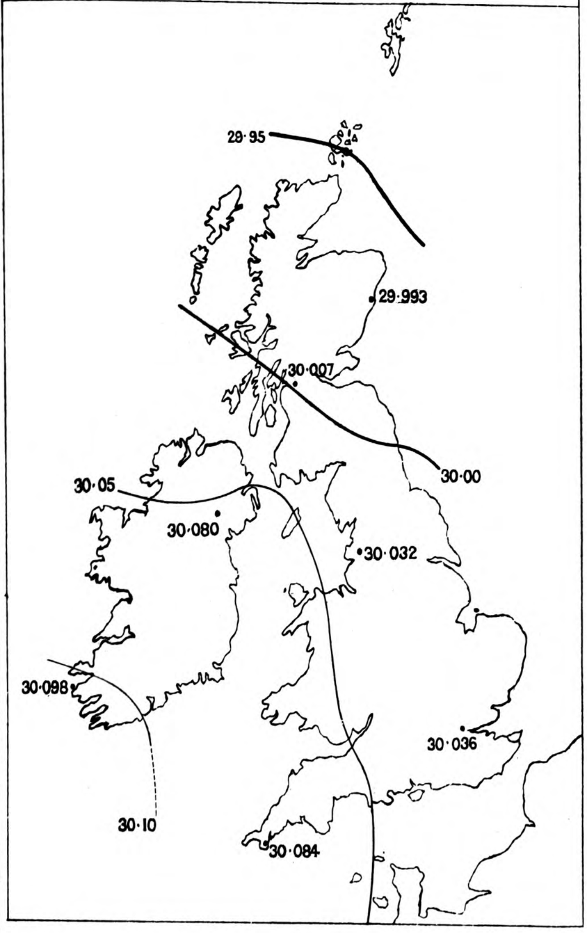

12
8
4
0
4
60
60
56
56
52
52
8
4
0

*To face p. 90.*

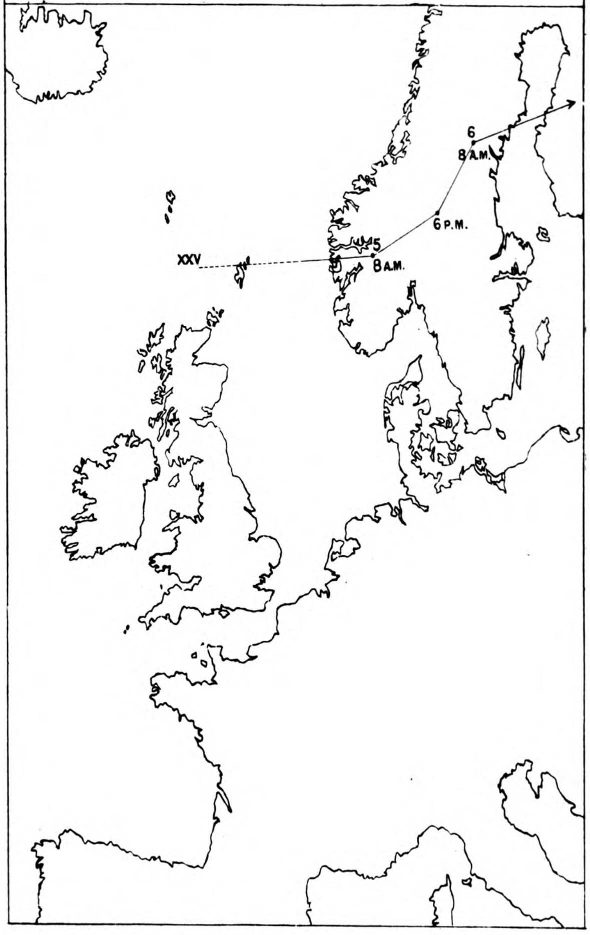
DANGERFIELD, LITH. 22, BEDFORD S^T. COVENT GARDEN. 1357/2.87

# MONTHLY WEATHER CHART JULY 1878.

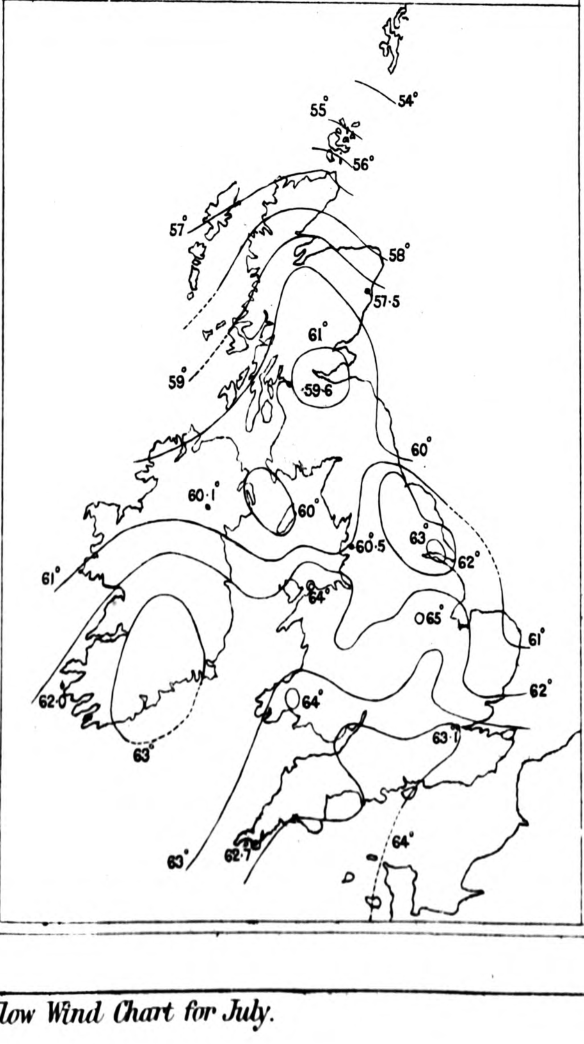
### 1. DISTRIBUTION OF MEAN PRESSURE


29·95
29·993
30·007
30·00
30·05
30·080
30·032
30·098
30·036
30·10
30·084

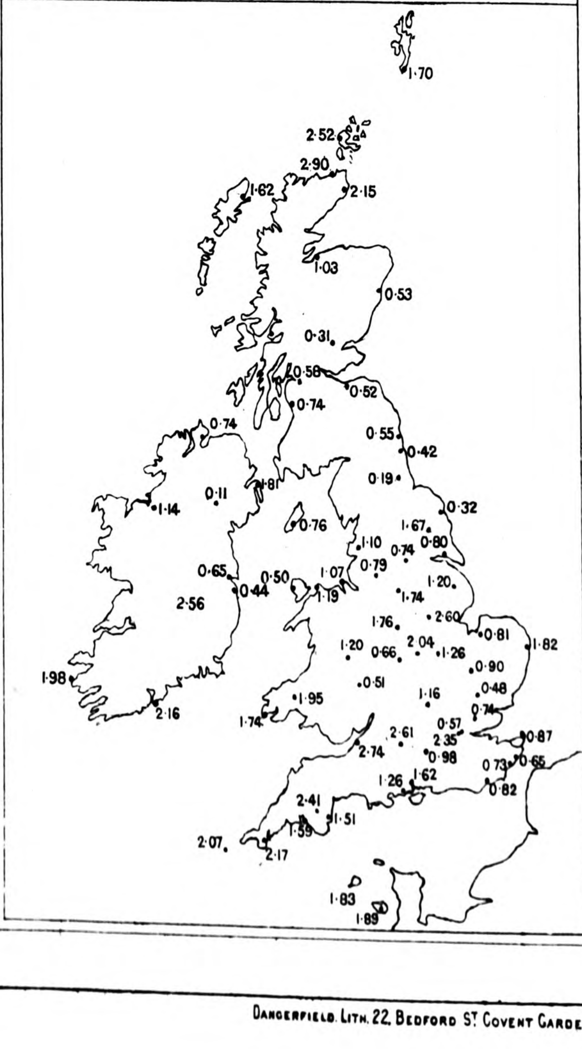
### 2. MOVEMENTS OF DEPRESSIONS.


6
8 A.M.
6 P.M.
XXV
5
8 A.M.

### 3. DISTRIBUTION OF MEAN TEMPERATURE


54°
55°
56°
57°
58°
57·5
61°
59°
59·6
60°
60·1°
60°
60·5
63°
62°
61°
64°
65°
61°
62°
62·0
64°
63°
63·1
63°
62·7
64°

### 4. RAINFALL


1·70
2·52
2·90
2·15
1·62
1·03
0·53
0·31
0·58
0·52
0·74
0·74
0·55
0·42
0·19
1·81
0·11
1·14
0·32
0·76
1·67
0·80
1·10
0·74
0·79
0·65
0·50
1·07
0·44
1·19
1·20
1·74
2·56
1·76
2·60
0·81
1·82
1·20
0·66
2·04
1·26
0·90
1·98
0·51
0·48
1·95
1·16
0·74
2·16
1·74
0·57
2·61
2·35
0·87
2·74
0·98
0·73
0·65
1·26
1·62
0·82
2·41
1·51
1·59
2·07
2·17
1·83
1·89

*To follow Wind Chart for July.*

DANGERFIELD. LITH. 22, BEDFORD ST. COVENT GARDEN (3571 2 87)

## REMARKS FOR AUGUST 1878.

(*Tables A. to C., August, with Monthly Wind and Weather Charts.*)

*Wind.*—The Easterly wind which had set in over England at the close of July had become general all over the kingdom by the morning of the 1st, and varied in force from a light breeze over Scotland to a moderate or fresh wind in the Channel. At the close of the day it backed to North-east, from which quarter it blew with moderate or fresh force for a couple of days. On the 4th it fell light, and veered again to East, and a little later to South-east, which continued to be the prevalent direction till the close of the 6th, when it veered still more to South-west and West, but by the 9th it had backed again, and a light to moderate Southerly breeze had become general. There was a temporary shift to North-west and North on the 10th, and again on the 16th, but upon the whole the wind blew from between South and West for several days. On the 18th the wind had become light and variable, and it continued so for several hours, although it gradually drew to the Eastward till at the close of the 21st a South-easterly breeze had become general. On the 22nd this increased to a moderate gale in the South-west, and freshened elsewhere, after which it backed to East, and in places to North-east and North. By the 25th the wind had again become light and variable, but it soon freshened again, and till the 29th it blew from between South and West, and at times rather strongly. It then backed to East over the northern portion of the kingdom, but continued to blow freshly from South or West in the Channel and over southern England; on the 30th, however, it drew into North over Ireland, and during the remainder of the month it blew from between West and North over the whole kingdom.

Dealing with the whole month, it will be seen that at the northern stations North-easterly or Easterly winds were most frequent, while at the mouth of the Channel those from South or South-west predominated, but that over the greater part of England there was no marked predominance from any quarter.

*Pressure.*—The distribution of mean pressure was peculiar, since while the difference between the means at Scilly and Wick was only 0·03 inch, it was three times as large between Stornoway and Sandwick. The range of pressure was greater than in July, and amounted to 1·3 inch at Aberdeen, where the barometer rose higher and fell lower than at any other observatory. The highest readings occurred everywhere on the 1st, when an anticyclone lay over the British Isles; but the dates of the minima were more irregular, and while, as a rule, they occurred at the northern stations about the middle of the month, in the south and south-west they were not recorded till near its close.

*Movements of the Depressions.*—Several depressions were observed during the month, some of which passed in an easterly direction across southern or central England, while others followed a similar course across Scotland, or moving in a more northerly direction, skirted our north-western coasts. One system moved from the northward down the Baltic, and then changing its course it travelled eastward over Russia; and at the beginning of the month a very shallow depression, after lying for some time near the Channel, moved away to the westward. The anticyclone which covered the kingdom at the beginning of the month moved away to northern Scandinavia.

*Temperature.*—The mean temperature varied from about 63° in the Channel to 57° in the north of Scotland, and was therefore slightly above the average for the month all over the kingdom. Both the maxima and minima occurred somewhat irregularly; the former were not high, and it was only in London and at Cambridge that a temperature of 80° was reached, while at some Midland stations the thermometer rose but little above 70°. The minima, on the other hand, were not so low as usual, and at many stations in southern

England were above 50°; at Greenwich the lowest temperature recorded was 50°·7, which was the highest monthly minimum recorded in August for very many years. The range of temperature was small; at some stations in the eastern counties of England it exceeded 30°, but elsewhere it ranged between 20° and 30°.

*Vapour Tension.*—The mean values decreased from 0·5 inch over the Channel to ·4 inch in the north of Scotland, while over the greater portion of the kingdom it was about ·43 inch. *Relative Humidity* was fairly uniform all over the British Isles, the mean percentage values being, as a rule, about 85.

*Rainfall.*—The fall of rain was below the average in the extreme north and in the north-west of the kingdom, but above it nearly everywhere else, and in some localities considerably so. Large daily falls were common, and occurred most generally about the 3rd, 13th, or 23rd. At Southampton 2·36 inches fell on the 24th, at Nottingham 2·34 inches on the 6th, and at Kingstown 2·28 inches on the 15th, while falls of upwards of an inch were recorded at many other stations.

TABLE A.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of AUGUST 1873; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE in the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation=100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia - - | 29·716 | 29·324 | 27th, 9 p.m. | 30·276 | 1st, 1 a.m. | 0·952 | 61·1 | 52·7 | 21st, 5 a.m. | 74·3 | 1st, 1 p.m. | 21·6 | ·447 | 83 | 6·508 |
| Armagh - - | ·739 | ·257 | 14th, 2 a.m. | ·389 | 1st, 1 a.m. | 1·132 | 59·3 | 48·0 | 17th, 2 a.m. | 72·0 | 1st, 3 p.m. | 24·0 | ·423 | 84 | 2·762 |
| Glasgow - - | ·725 | ·229 | 12th, 5 a.m.<br>13th, 3 a.m. | ·374 | 1st, 1 a.m.<br>2 a.m. | 1·145 | 58·8 | 43·6 | 17th, 5 a.m. | 75·2 | 1st, 3 p.m. | 31·6 | ·391 | 79 | 2·872 |
| Aberdeen - - | ·775 | ·117 | 13th, 7 a.m. | ·407 | 1st, 1 a.m. | 1·290 | 56·9 | 43·9 | 20th, 5 a.m. | 70·7 | 12th, 2 p.m. | 26·8 | ·398 | 86 | 3·950 |
| Falmouth - | ·762 | ·180 | 29th, 10 p.m. | ·291 | 1st, 1 a.m. | 1·111 | 61·9 | 53·8 | 4th, 6 a.m. | 72·4 | 8th, 2 p.m. | 18·6 | ·460 | 84 | 5·120 |
| Stonyhurst - - | ·733 | ·187 | 14th, 4 a.m. | ·406 | 1st, 1 a.m. | 1·219 | 59·7 | 46·2 | 26th, 5 a.m. | 72·8 | 1st, 3 p.m. | 26·6 | ·416 | 82 | 7·016 |
| Kew - - | 29·759* | 29·154 | 30th, 6 a.m. | 30·373 | 1st, 1 a.m. | 1·219 | 62·2 | 51·9 | 26th, 4 a.m. | 77·1 | 5th, 3 p.m. | 25·2 | ·447 | 80 | 6·510 |

* Means for three days are approximate

## TABLE B., AUGUST.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of Latitude,

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Means of | | | Absolute Extremes. | | | |
| | | | | | | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| 0. SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·789 | 58·1 | 54·7 | 56·4 | 52·0 | 61·8 | 56·9 | 41·4 | 20th | 69·5 | 1st |
| 1. SCOTLAND, E. | Glenalmond | ·760 | 58·4 | 55·6 | 57·0 | 50·8 | 65·3 | 58·1 | 43·5 | 3rd, 9th, 14th | 76·7 | 4th |
| 2. ENGLAND, N.E. | Seaham | ·739 | 61·2 | 58·1 | 59·7 | 54·1 | 65·6 | 59·9 | 45·3 | 1st | 74·2 | 8th |
| | Durham* | ·729 | 62·4 | 55·9 | 59·2 | 52·8 | 68·6 | 60·7 | 42·7 | 1st | 74·4 | 7th |
| | Hull | ·762 | 62·0 | 59·4 | 60·7 | 54·7 | 69·4 | 62·1 | 46·0 | 22nd | 77·0 | 27th |
| | Kelstern 𝕸 | ·751 | 61·1 | 56·6 | 58·9 | 52·5 | 67·7 | 60·1 | 44·1 | 21st | 72·6 | 6th, 18th |
| 3. ENGLAND, E. | Hillington 𝕸 | ·748 | 64·0 | 58·4 | 61·2 | 53·2 | 71·1 | 62·2 | 40·1 | 22nd | 78·6 | 6th |
| | Audley End 𝕸 | ·743 | 63·7 | 58·5 | 61·1 | 54·6 | 70·7 | 62·7 | 43·3 | 21st | 78·6 | 5th |
| | Chigwell Row | ·792 | 62·5 | 60·3 | 61·4 | 55·5 | 68·0 | 61·8 | 50·2 | 17th | 75·2 | 14th |
| 4. MIDLAND COUNTIES. | Wakefield 𝕸 | ·741 | 61·2 | 58·2 | 59·7 | 52·6 | 68·5 | 60·6 | 43·8 | 22nd | 73·4 | 2nd |
| | Buxton 𝕸 | ·765 | 58·1 | 55·3 | 56·7 | 50·8 | 64·5 | 57·7 | 42·0 | 19th | 69·5 | 2nd |
| | Cheadle 𝕸 | ·745 | 58·4 | 56·8 | 57·6 | 52·0 | 66·5 | 59·3 | 43·2 | 17th | 70·8 | 2nd, 5th |
| | Leicester | ·745 | 62·2 | 60·2 | 61·2 | 54·2 | 69·3 | 61·8 | 46·1 | 1st | 74·8 | 5th |
| | Uppingham | ·747 | 61·3 | 57·4 | 59·4 | 52·8 | 70·1 | 61·5 | 45·4 | 21st | 78·2 | 26th |
| | Oscott | ·745 | 60·5 | 58·3 | 59·4 | 53·2 | 69·2 | 61·2 | 46·2 | 1st | 74·7 | 18th |
| | Churchstoke 𝕸 | ·759 | 59·1 | 57·7 | 58·4 | 52·5 | 66·5 | 59·5 | 44·2 | 1st | 70·2 | 7th |
| | Hereford 𝕸 | ·741 | 61·1 | 58·9 | 60·0 | 53·9 | 68·1 | 61·0 | 47·0 | 9th | 73·4 | 10th |
| 5. ENGLAND, S. | Marlborough 𝕸 | ·771 | 61·7 | 58·4 | 60·1 | 54·7 | 70·4 | 62·6 | 48·0 | 1st | 74·6 | 5th |
| | Strathfield Turgiss 𝕸 | ·737 | 63·5 | 59·3 | 61·4 | 55·5 | 71·5 | 63·5 | 48·6 | 1st | 77·6 | 5th |
| | Ramsgate 𝕸 | ·798 | 65·0 | 61·1 | 63·1 | 57·8 | 69·6 | 63·7 | 52·8 | 21st | 76·0 | 8th |
| | Folkestone | ·779 | 63·6 | 60·8 | 62·2 | 56·7 | 68·1 | 62·4 | 50·8 | 17th | 74·5 | 5th |
| | Southampton† | ·771 | 64·2 | 60·3 | 62·3 | 56·6 | 69·7 | 63·2 | 51·2 | 17th | 73·4 | 3rd |
| | Hastings | ·779 | 63·0 | 60·3 | 61·7 | 57·2 | 67·4 | 62·3 | 51·4 | 17th | 73·9 | 5th |
| 6. SCOTLAND, W. | —— | — | — | — | — | — | — | — | — | — | — | — |
| 7. ENGLAND, N.W. | Douglas | ·719 | 60·9 | 57·4 | 59·2 | 53·3 | 65·2 | 59·3 | 42·4 | 1st | 73·4 | 1st |
| | Prestwich | ·728 | 60·2 | 58·1 | 59·2 | 53·9 | 66·9 | 60·4 | 47·9 | 26th | 72·6 | 2nd |
| | Llandudno 𝕸 | ·729 | 63·3 | 59·3 | 61·3 | 55·6 | 70·9 | 63·3 | 51·2 | 26th | 78·5 | 5th |
| 8. ENGLAND, S.W. | Caermarthen 𝕸 | ·730 | 63·2 | 58·7 | 61·0 | 54·6 | 69·4 | 62·0 | 47·0 | 17th | 75·5 | 1st |
| | Dartmoor 𝕸 | ·747 | 57·8 | 54·4 | 56·1 | 50·5 | 61·9 | 56·2 | 40·0 | 7th, 12th | 68·1 | 19th |
| | Babbacombe 𝕸 | ·764 | 62·9 | 59·0 | 61·0 | 56·3 | 68·0 | 62·2 | 49·0 | 17th | 72·8 | 8th |
| 9. IRELAND, N. | Markree Castle | ·723 | 61·2 | 57·8 | 59·5 | 53·1 | 67·0 | 60·1 | 40·4 | 25th | 76·7 | 1st |
| 10. IRELAND, S. | Dublin | ·740 | 60·6 | 59·1 | 59·9 | 55·8 | 65·6 | 60·7 | 49·4 | 17th | 71·4 | 7th |
| | Parsonstown | ·735 | 60·7 | 58·4 | 59·6 | 55·8 | 67·8 | 61·8 | 46·6 | 28th | 76·3 | 1st |
| CHANNEL | Jersey (St. Aubin's) | 29·832 | 64·6 | 61·5 | 63·1 | 59·1 | 69·7 | 64·4 | 55·0 | 4th | 73·8 | 10th |

NOTE.—The stations marked thus 𝕸 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of AUGUST 1878.
corrected for Diurnal Range.
beginning in each case with the Station lying furthest North.)

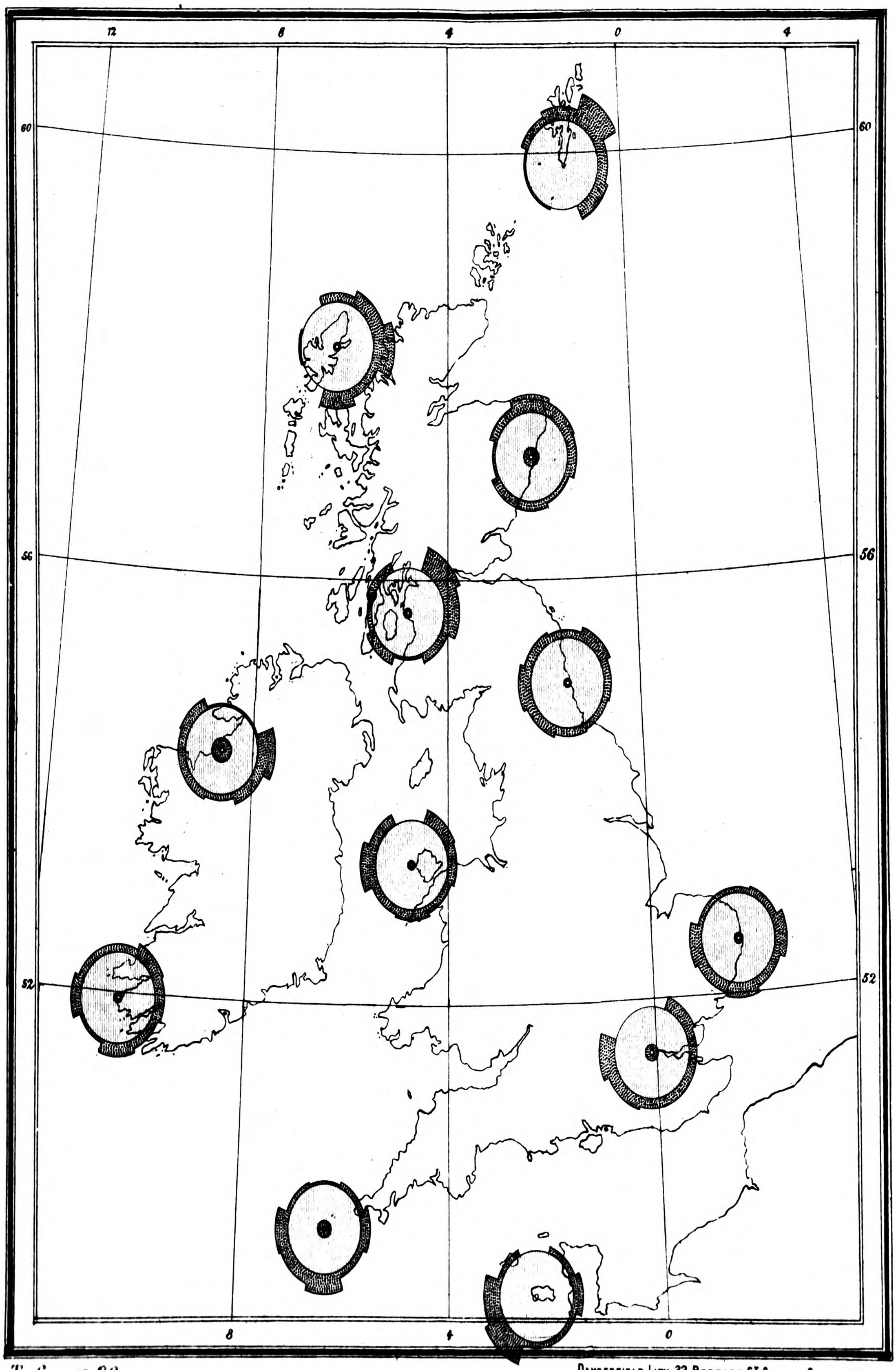
| . Tension of Vapour. | | | Relative Humidity. | | | Amount of Cloud (0 to 10). | | | Rainfall. | | | Weather. No. of Days of | | | | | | | Wind. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·384 | ·372 | ·378 | 79 | 87 | 83 | 6·3 | 7·7 | 7·0 | 1·400 | ·280 | 10th | 13 | 0 | 1 | 0 | 2 | 14 | 0 | 8 | 9 | 16 | 12 | 1 | 4 | 2 | 1 | 9 |
| ·408 | ·399 | ·404 | 84 | 90 | 87 | 6·3 | 7·0 | 6·7 | 4·806 | 1·170 | 15th | 20 | 0 | 0 | 3 | 1 | 9 | 1 | 3 | 8 | 25 | 5 | 5 | 7 | 5 | 3 | 1 |
| ·449 | ·432 | ·441 | 83 | 89 | 86 | 7·0 | 6·9 | 7·0 | 4·572 | 1·030 | 3rd | 21 | 0 | 0 | 5 | 1 | 11 | 0 | 3 | 9 | 8 | 4 | 3 | 11 | 7 | 1 | 16 |
| ·458 | ·411 | ·435 | 82 | 92 | 87 | 7·9 | 6·9 | 7·4 | 6·814 | 1·535 | 3rd | 19 | 0 | 0 | 4 | 0 | 17 | 0 | 3 | 13 | 8 | 2 | 12 | 9 | 6 | 6 | 3 |
| ·456 | ·447 | ·452 | 82 | 89 | 86 | 6·9 | 5·4 | 6·2 | 4·580 | ·680 | 13th | 22 | 0 | 0 | 1 | 3 | 10 | 1 | 3 | 14 | 5 | 6 | 6 | 12 | 8 | 3 | 5 |
| ·457 | ·433 | ·445 | 85 | 94 | 90 | 7·0 | 5·3 | 6·2 | 5·921 | 1·016 | 13th | 26 | 0 | 0 | 9 | 0 | 8 | 0 | 1 | 10 | 13 | 6 | 4 | 12 | 7 | 8 | 1 |
| ·501 | ·461 | ·481 | 84 | 94 | 89 | 6·7 | 6·7 | 6·7 | 5·587 | 1·930 | 3rd | 23 | 0 | 0 | 8 | 0 | 11 | 0 | 1 | 11 | 5 | 12 | 3 | 16 | 4 | 9 | 1 |
| ·458 | ·444 | ·451 | 78 | 91 | 85 | 6·9 | 6·3 | 6·6 | 3·840 | ·760 | 12th | 22 | 0 | 0 | 10 | 0 | 10 | 0 | 0 | 9 | 2 | 10 | 1 | 16 | 9 | 7 | 8 |
| ·458 | ·440 | ·449 | 81 | 84 | 83 | 8·4 | 6·7 | 7·6 | 5·390 | ·760 | 23rd | 22 | 0 | 1 | 9 | 0 | 9 | 0 | 0 | 4 | 10 | 7 | 15 | 13 | 6 | 0 | 7 |
| ·431 | ·421 | ·426 | 80 | 87 | 83 | 7·1 | 6·3 | 6·7 | 5·640 | ·780 | 13th | 23 | 0 | 0 | 5 | 1 | 9 | 0 | 3 | 12 | 12 | 4 | 4 | 5 | 13 | 2 | 7 |
| ·413 | ·399 | ·406 | 85 | 91 | 88 | 7·7 | 6·0 | 6·9 | 6·440 | 1·090 | 13th | 23 | 0 | 0 | 5 | 0 | 9 | 0 | 1 | 2 | 7 | 13 | 6 | 9 | 8 | 13 | 3 |
| ·424 | ·413 | ·419 | 87 | 89 | 88 | 7·9 | 6·8 | 7·4 | 7·910 | 1·210 | 6th | 25 | 0 | 0 | 8 | 1 | 15 | 2 | 2 | 4 | 17 | 8 | 10 | 9 | 7 | 5 | 0 |
| ·436 | ·429 | ·433 | 78 | 83 | 81 | 8·3 | 6·8 | 7·6 | 6·760 | 1·780 | 3rd | 22 | 0 | 0 | 4 | 0 | 11 | 0 | 1 | 12 | 4 | 6 | 0 | 21 | 7 | 4 | 7 |
| ·449 | ·421 | ·435 | 83 | 89 | 86 | 7·7 | 7·3 | 7·5 | 5·342 | 1·201 | 3rd | 20 | 0 | 1 | 7 | 1 | 17 | 0 | 2 | 9 | 3 | 7 | 7 | 12 | 6 | 7 | 9 |
| ·450 | ·433 | ·442 | 86 | 89 | 87 | 8·5 | 6·9 | 7·7 | 6·290 | 1·030 | 22nd | 19 | 0 | 0 | 8 | 0 | 15 | 0 | 2 | 10 | 11 | 4 | 5 | 14 | 9 | 3 | 4 |
| ·418 | ·413 | ·416 | 84 | 87 | 85 | 6·9 | 6·8 | 6·9 | 5·713 | 1·163 | 23rd | 19 | 0 | 0 | 6 | 0 | 9 | 0 | 2 | 7 | 8 | 6 | 3 | 12 | 14 | 4 | 6 |
| ·441 | ·431 | ·436 | 82 | 87 | 85 | 8·0 | 6·5 | 7·3 | 6·577 | 1·260 | 23rd | 21 | 0 | 0 | 4 | 0 | 12 | 0 | 0 | 4 | 11 | 3 | 6 | 9 | 10 | 3 | 16 |
| ·457 | ·444 | ·451 | 84 | 91 | 87 | 8·3 | 5·7 | 7·0 | 5·522 | 1·436 | 22nd | 20 | 0 | 0 | 4 | 0 | 10 | 0 | 2 | 2 | 7 | 1 | 1 | 16 | 3 | 0 | 30 |
| ·475 | ·443 | ·459 | 82 | 88 | 85 | 7·9 | 6·4 | 7·2 | 4·384 | ·650 | 22nd | 18 | 0 | 0 | 8 | 0 | 14 | 0 | 0 | 0 | 11 | 10 | 3 | 27 | 8 | 0 | 3 |
| ·472 | ·476 | ·474 | 77 | 89 | 83 | 6·9 | 5·8 | 6·4 | 3·609 | ·761 | 16th | 17 | 0 | 0 | 5 | 0 | 7 | 2 | 0 | 12 | 7 | 2 | 2 | 33 | 2 | 0 | 4 |
| ·485 | ·477 | ·481 | 82 | 89 | 86 | 6·7 | 5·2 | 6·0 | 4·690 | 1·240 | 24th | 20 | 0 | 0 | 5 | 1 | 7 | 1 | 3 | 10 | 9 | 2 | 10 | 11 | 17 | 0 | 0 |
| ·451 | ·450 | ·451 | 76 | 86 | 81 | 8·8 | 5·5 | 7·2 | 6·880 | 2·365 | 24th | 23 | 0 | 0 | 5 | 0 | 14 | 0 | 1 | 12 | 0 | 7 | 2 | 26 | 7 | 2 | 5 |
| ·472 | ·464 | ·468 | 82 | 89 | 86 | 7·3 | 6·1 | 6·7 | 9·015 | 1·770 | 23rd | 25 | 0 | 1 | 6 | 0 | 11 | 3 | 2 | 15 | 2 | 2 | 11 | 21 | 8 | 1 | 0 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·445 | ·420 | ·433 | 83 | 89 | 86 | 6·6 | 6·6 | 6·6 | 3·707 | 1·145 | 13th | 14 | 0 | 0 | 3 | 3 | 13 | 0 | 1 | 9 | 13 | 5 | 5 | 4 | 6 | 5 | 14 |
| ·427 | ·422 | ·425 | 82 | 87 | 85 | 8·2 | 6·1 | 7·2 | 5·428 | ·840 | 13th | 22 | 0 | 0 | 6 | 1 | 13 | 0 | 0 | 6 | 10 | 5 | 7 | 4 | 14 | 1 | 15 |
| ·437 | ·431 | ·434 | 76 | 85 | 81 | 7·1 | 6·2 | 6·7 | 4·460 | 1·570 | 13th | 18 | 0 | 0 | 1 | 3 | 13 | 2 | 5 | 2 | 12 | 5 | 4 | 10 | 17 | 7 | 0 |
| ·454 | ·439 | ·447 | 79 | 89 | 84 | 8·0 | 7·1 | 7·6 | 7·030 | 1·950 | 4th | 22 | 0 | 0 | 2 | 2 | 15 | 0 | 1 | 6 | 15 | 3 | 2 | 9 | 19 | 1 | 6 |
| ·428 | ·405 | ·417 | 90 | 96 | 93 | 7·1 | 6·4 | 6·8 | 9·120 | 1·670 | 13th | 26 | 0 | 0 | 3 | 0 | 9 | 0 | 1 | 5 | 12 | 2 | 5 | 12 | 11 | 8 | 6 |
| ·471 | ·451 | ·461 | 82 | 90 | 86 | 7·8 | 6·1 | 7·0 | 4·720 | ·820 | 20th | 21 | 0 | 0 | 3 | 1 | 12 | 0 | 1 | 6 | 9 | 2 | 4 | 15 | 18 | 2 | 5 |
| ·434 | ·415 | ·425 | 81 | 87 | 84 | 7·6 | 7·7 | 7·7 | 3·638 | 1·041 | 26th | 23 | 0 | 0 | 2 | 1 | 18 | 0 | 3 | 3 | 11 | 10 | 5 | 5 | 4 | 7 | 14 |
| ·439 | ·442 | ·441 | 83 | 88 | 86 | 7·2 | 6·1 | 6·7 | 4·641 | 1·106 | 13th | 22 | 0 | 1 | 1 | 0 | 10 | 1 | 1 | 8 | 10 | 7 | 6 | 4 | 12 | 7 | 7 |
| ·434 | ·443 | ·439 | 82 | 91 | 86 | 8·3 | 7·5 | 7·9 | 3·790 | ·605 | 13th | 23 | 0 | 0 | 0 | 1 | 19 | 0 | 3 | 6 | 6 | 13 | 5 | 12 | 8 | 8 | 1 |
| ·488 | ·473 | ·481 | 81 | 87 | 84 | 7·5 | 5·0 | 6·3 | 3·310 | ·753 | 23rd | 22 | 0 | 0 | 2 | 0 | 10 | 0 | 2 | 6 | 4 | 7 | 4 | 19 | 12 | 2 | 6 |

## TABLE C., AUGUST.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of AUGUST 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. | | | | | | | | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Means of | | | Absolute Extremes. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | At 8 a.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. | | | | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| 0. SCOTLAND, N. | Sumburgh Head | 29·792 | 55·6 | 50·1 | 60·0 | 55·1 | 41 | 19th | 67 | 6th | 0·407 | 92 | 5·9 | 0·99 | 0·36 | 10th | 12 | 0 | 0 | 0 | 9 | 9 | 0 | 5 | 12 | 4 | 5 | 0 | 1 | 1 | 3 | 0 |
| | Thurso | 29·783 | 57·8 | 50·1 | 64·4 | 57·3 | 37 | 20th | 72 | 5th | ·398 | 84 | 6·8 | 1·43 | 0·26 | 26th, 30th | 18 | 0 | 0 | 0 | 6 | 15 | 0 | 3 | 5 | 4 | 5 | 2 | 0 | 1 | 3 | 8 |
| | Wick | 29·770 | 57·2 | 49·7 | 64·4 | 57·1 | 39 | 17th | 74 | 1st, 9th | ·409 | 87 | 7·4 | 1·48 | 0·30 | 15th | 16 | 0 | 0 | 0 | 6 | 19 | 0 | 3 | 8 | 6 | 6 | 3 | 0 | 2 | 2 | 1 |
| | Stornoway | 29·699 | 58·5 | 50·7 | 62·5 | 56·6 | 40 | 17th, 25th | 69 | 5th | ·426 | 87 | 4·1 | 1·46 | 0·54 | 11th | 12 | 0 | 0 | 0 | 15 | 5 | 1 | 3 | 6 | 11 | 3 | 6 | 0 | 1 | 0 | 1 |
| 1. SCOTLAND, E. | Nairn | 29·762 | 56·5 | 52·1 | 64·4 | 58·3 | 43 | 24th | 73 | 1st, 5th | ·398 | 87 | 6·3 | 4·66 | 1·19 | 7th | 19 | 0 | 0 | 2 | 9 | 16 | 0 | 0 | 2 | 7 | 1 | 0 | 2 | 1 | 1 | 17 |
| | Aberdeen | 29·753 | 57·6 | 53·0 | 63·4 | 58·2 | 44 | 20th, 23rd | 73 | 12th | ·415 | 87 | 6·4 | 3·94 | 1·06 | 15th | 22 | 0 | 0 | 1 | 8 | 13 | 0 | 7 | 5 | 4 | 2 | 3 | 3 | 1 | 3 | 3 |
| | Leith | 29·721 | 58·1 | 52·8 | 66·3 | 59·6 | 45 | 17th, 23rd | 74 | 5th | ·423 | 87 | 7·0 | 3·12 | 0·58 | 16th, 30th | 19 | 0 | 0 | 1 | 3 | 14 | 0 | 0 | 4 | 10 | 4 | 0 | 1 | 6 | 4 | 2 |
| 2. ENGLAND, N.E. | Shields | 29·737 | 59·3 | 54·1 | 64·7 | 59·4 | 47 | 1st | 71 | 7th | ·420 | 84 | 7·8 | 4·44 | 1·02 | 3rd | 23 | 0 | 0 | 4 | 4 | 20 | 5 | 3 | 5 | 3 | 2 | 3 | 4 | 6 | 4 | 1 |
| | Scarborough | 29·742 | 60·3 | 55·9 | 64·5 | 60·2 | 52 | 22nd, 23rd | 71 | 8th | ·437 | 84 | 6·8 | 5·73 | 0·81 | 30th | 21 | 0 | 1 | 4 | 4 | 13 | 0 | 7 | 3 | 3 | 3 | 2 | 6 | 5 | 2 | 0 |
| | York | 29·741 | 59·0 | 52·8 | 69·2 | 61·0 | 45 | 1st | 75 | 5th | ·433 | 87 | 6·4 | 5·37 | 1·26 | 13th | 23 | 0 | 0 | 4 | 9 | 16 | 0 | 1 | 4 | 5 | 1 | 8 | 2 | 5 | 5 | 0 |
| 3. ENGLAND, E. | Yarmouth | 29·754 | 62·3 | 57·0 | 67·1 | 62·1 | 50 | 21st | 75 | 8th | ·471 | 84 | 5·2 | 4·41 | 1·18 | 12th | 18 | 0 | 1 | 5 | 8 | 4 | 3 | 2 | 3 | 6 | 3 | 5 | 4 | 5 | 2 | 1 |
| | Cambridge | 29·746 | 61·1 | 54·2 | 72·3 | 63·3 | 44 | 21st | 80 | 5th | ·469 | 87 | 6·7 | 4·02 | 0·91 | 29th | 21 | 0 | 0 | 10 | 8 | 16 | 0 | 3 | 2 | 4 | 5 | 2 | 11 | 0 | 2 | 2 |
| 4. MIDLAND COUNTIES. | Nottingham | 29·747 | 61·5 | 53·2 | 72·1 | 62·7 | 44 | 1st | 79 | 9th, 26th | ·470 | 86 | 7·1 | 8·64 | 2·34 | 6th | 23 | 0 | 2 | 9 | 7 | 18 | 1 | 6 | 3 | 1 | 4 | 5 | 7 | 3 | 1 | 1 |
| | Oxford | 29·748 | 59·8 | 55·5 | 69·3 | 62·4 | 49 | 1st | 74 | 5th, 6th | ·447 | 87 | 7·7 | 5·01 | 1·10 | 4th | 20 | 0 | 0 | 7 | 6 | 20 | 1 | 3 | 2 | 4 | 2 | 4 | 5 | 7 | 0 | 4 |
| 5. ENGLAND, S. | London | 29·756 | 61·8 | 55·7 | 72·2 | 64·0 | 51 | 17th, 18th | 81 | 5th | ·447 | 87 | 7·5 | 6·72 | 1·65 | 3rd | 23 | 0 | 0 | 8 | 2 | 15 | 2 | 0 | 5 | 4 | 4 | 4 | 5 | 7 | 0 | 2 |
| | Dover | 29·770 | 64·0 | 59·3 | 67·7 | 63·5 | 53 | 17th, 18th | 71 | 5th, 6th, 8th, 11th. | ·470 | 79 | 4·6 | 2·74 | 0·54 | 13th | 18 | 0 | 0 | 2 | 8 | 3 | 1 | 0 | 2 | 9 | 1 | 0 | 11 | 7 | 1 | 0 |
| | Hurst Castle | 29·751 | 63·3 | 58·5 | 69·2 | 63·9 | 53 | 2nd, 9th | 74 | 9th | ·539 | 93 | 6·7 | 3·30 | 0·99 | 22nd | 21 | 0 | 0 | 1 | 3 | 10 | 3 | 1 | 2 | 4 | 4 | 2 | 5 | 9 | 3 | 1 |
| 6. SCOTLAND, W. | Ardrossan | 29·722 | 59·3 | 55·1 | 67·0 | 61·1 | 48 | 17th | 78 | 4th | ·418 | 83 | 6·5 | 3·19 | 0·93 | 6th | 16 | 0 | 0 | 1 | 4 | 10 | 0 | 0 | 10 | 7 | 3 | 1 | 4 | 2 | 3 | 1 |
| 7. ENGLAND, N.W. | Liverpool | 29·730 | 60·0 | 56·2 | 67·1 | 61·7 | 52 | 1st | 74 | 2nd | ·435 | 84 | 6·4 | 4·22 | 0·98 | 13th | 19 | 0 | 0 | 0 | 6 | 12 | 0 | 1 | 3 | 6 | 5 | 2 | 3 | 8 | 1 | 2 |
| | Holyhead | 29·729 | 59·9 | 57·1 | 66·7 | 61·9 | 53 | 17th | 71 | 5th, 6th | ·457 | 90 | 6·2 | 3·94 | 0·95 | 13th | 17 | 0 | 0 | 1 | 8 | 11 | 2 | 0 | 5 | 4 | 3 | 4 | 3 | 7 | 4 | 1 |
| 8. ENGLAND, S.W. | Pembroke | 29·721 | 60·7 | 57·9 | 65·9 | 61·9 | 53 | 2nd | 71 | 1st, 6th, 19th. | ·459 | 87 | 6·6 | 5·41 | 0·81 | 4th | 17 | 0 | 0 | 2 | 3 | 11 | 6 | 1 | 3 | 6 | 6 | 1 | 4 | 7 | 3 | 0 |
| | Portishead | 29·732 | 60·7 | 55·8 | 70·7 | 63·3 | 52 | 1st, 2nd | 76 | 9th | ·469 | 89 | 8·2 | 3·17 | 0·83 | 13th | 19 | 0 | 0 | 2 | 2 | 20 | 3 | 3 | 4 | 2 | 4 | 3 | 8 | 6 | 1 | 0 |
| | Plymouth | 29·748 | 61·4 | 57·3 | 68·3 | 62·8 | 50 | 4th, 18th | 73 | 7th, 8th | ·484 | 90 | 7·8 | 5·41 | 0·94 | 13th | 22 | 0 | 0 | 1 | 2 | 18 | 4 | 0 | 4 | 5 | 4 | 1 | 8 | 5 | 1 | 3 |
| 9. IRELAND, N. | Greencastle | 29·716 | 58·8 | 53·1 | 67·6 | 60·4 | 46 | 17th | 77 | 1st | ·433 | 88 | 8·2 | 3·70 | 0·92 | 29th | 19 | 0 | 0 | 0 | 4 | 24 | 0 | 4 | 6 | 7 | 3 | 4 | 3 | 2 | 2 | 0 |
| | Donaghadee | 29·728 | 58·1 | 54·1 | 64·1 | 59·1 | 47 | 1st | 68 | 8th | ·449 | 92 | 6·1 | 2·67 | 0·72 | 29th | 23 | 0 | 0 | 0 | 4 | 8 | 2 | 2 | 6 | 6 | 4 | 1 | 4 | 6 | 2 | 0 |
| 10. IRELAND, S. | Kingstown | 29·736 | 59·7 | 57·0 | 64·5 | 60·8 | 51 | 17th | 69 | 7th | ·433 | 85 | 7·0 | 6·49 | 2·28 | 15th | 21 | 0 | 1 | 2 | 4 | 13 | 2 | 0 | 3 | 4 | 6 | 3 | 2 | 5 | 6 | 2 |
| | Valencia | 29·721 | 60·7 | 55·5 | 66·4 | 61·0 | 51 | 21st | 73 | 1st, 2nd, 3rd. | ·440 | 84 | 7·6 | 6·31 | 0·83 | 11th | 28 | 0 | 0 | 0 | 3 | 15 | 3 | 3 | 5 | 4 | 3 | 5 | 2 | 5 | 3 | 1 |
| | Roche's Point | 29·733 | 60·5 | 56·2 | 67·8 | 62·0 | 52 | 25th | 74 | 1st | ·434 | 83 | 6·7 | 6·43 | 0·86 | 22nd | 21 | 0 | 0 | 0 | 4 | 12 | 2 | 6 | 3 | 7 | 1 | 3 | 3 | 5 | 3 | 0 |
| CHANNEL ISLANDS | Scilly | 29·753 | 62·7 | 59·5 | 66·4 | 63·0 | 57 | 16th, 17th, 30th. | 72 | 8th | ·498 | 88 | 8·5 | 5·00 | 1·37 | 29th | 22 | 0 | 0 | 2 | 0 | 15 | 6 | 1 | 2 | 4 | 2 | 7 | 5 | 6 | 2 | 2 |
| | Jersey | 29·763 | 62·8 | 59·2 | 67·7 | 63·5 | 55 | 4th | 73 | 9th | ·509 | 89 | 7·0 | 2·89 | 0·65 | 23rd | 20 | 0 | 0 | 1 | 2 | 10 | 8 | 0 | 2 | 4 | 2 | 2 | 11 | 8 | 2 | 0 |

# MONTHLY WIND CHART FOR AUGUST 1878.


12
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4
60
60
56
56
52
52
8
4
0

*To face p. 96.*

DANGERFIELD, LITH. 22, BEDFORD ST. COVENT GARDEN. 13571 2.87.

# MONTHLY WEATHER CHART AUGUST 1878

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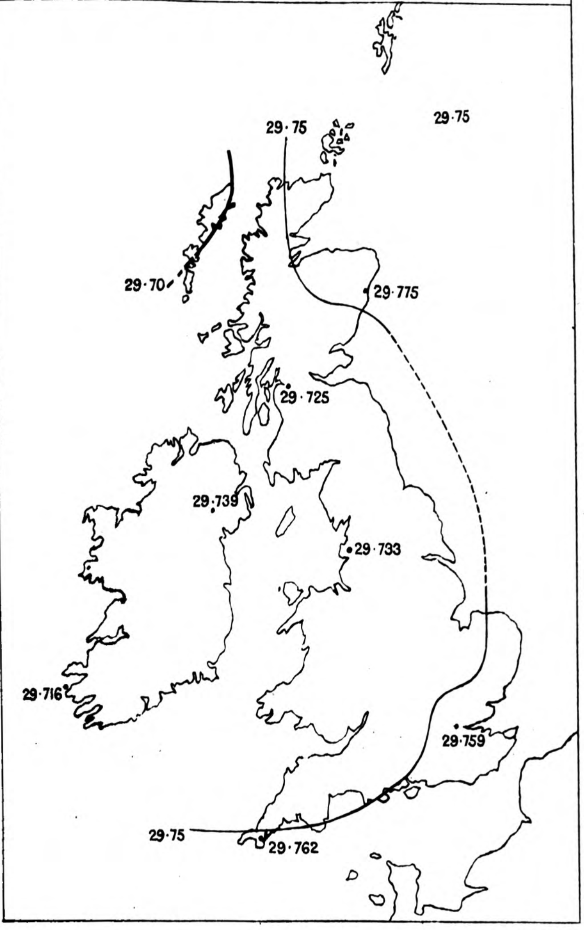
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29·739
29·733
29·716
29·759
29·75
29·762

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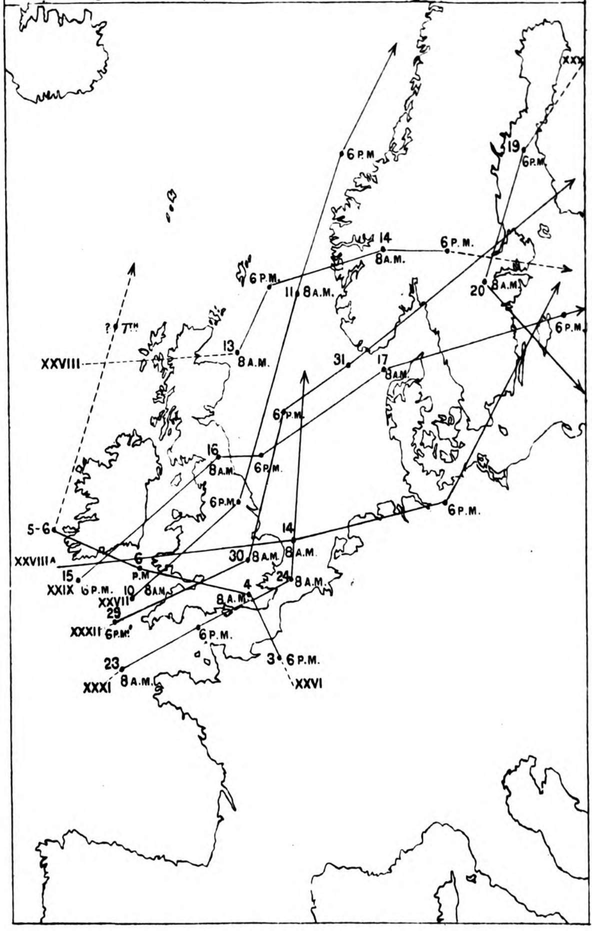
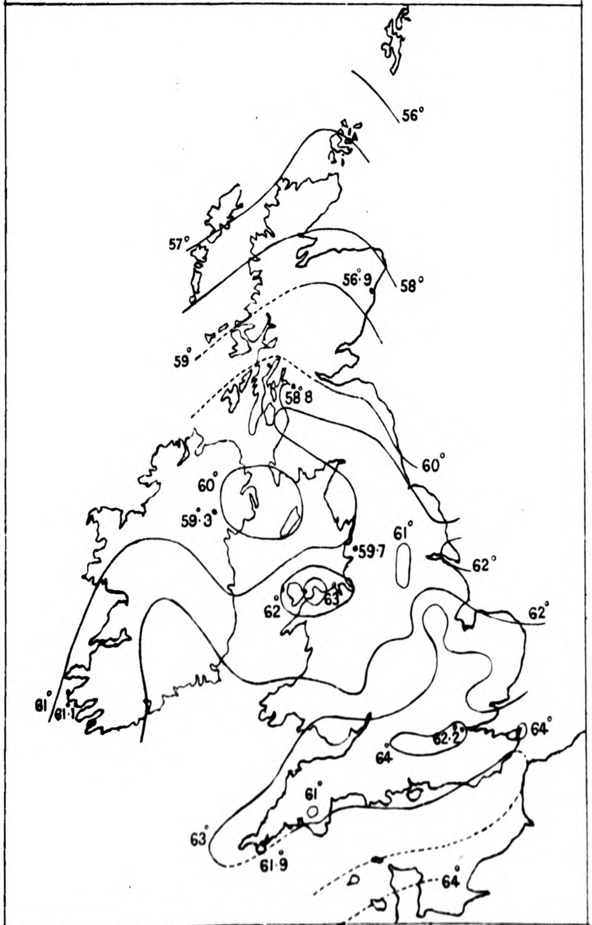

XXX
19
6P.M.
6P.M
14
8A.M.
6P.M.
6P.M.
11 8A.M.
20 8A.M.
? 7TH
6P.M.
XXVIII
13
8A.M.
31
17
8A.M.
6P.M.
16
8A.M.
6P.M.
6P.M.
6P.M.
5-6
14
8A.M.
XXVIIIA
30 8A.M.
6
P.M
15
XXIX 6P.M.
10 8A.M.
XXVII
24 8A.M.
4
8A.M.
29
XXXII 6P.M.
6P.M.
3 6P.M.
23
XXXI 8A.M.
XXVI

## 3. DISTRIBUTION OF MEAN TEMPERATURE


56°
57°
58°
56·9
59°
58·8
60°
60°
59·3
61°
59·7
62°
62°
63°
62°
61°
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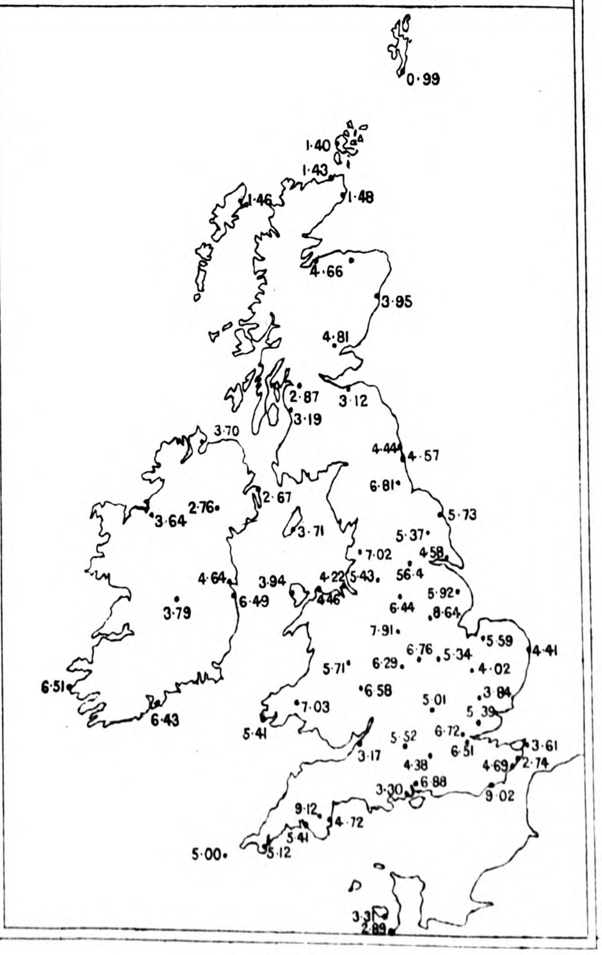
62·2
64°
64
61°
63°
61·9
64°

## 4. RAINFALL


0·99
1·40
1·43
1·46
1·48
4·66
3·95
4·81
2·87
3·12
3·19
3·70
4·44
4·57
6·81
2·67
2·76
3·64
5·73
3·71
5·37
7·02
4·58
4·22
5·43
56·4
4·64
3·94
4·46
5·92
6·49
3·79
6·44
8·64
7·91
5·59
4·41
6·76
5·34
5·71
6·29
4·02
6·51
6·58
3·84
5·01
7·03
5·39
6·43
6·72
5·41
5·52
3·61
3·17
4·38
6·51
4·69
2·74
3·30
6·88
9·02
9·12
4·72
5·41
5·00
5·12
3·31
2·89

*To follow Wind Chart for August.*

DANGERFIELD LITH. 22 BEDFORD ST. COVENT GARDEN. 13571 2.81.

## REMARKS FOR SEPTEMBER 1878.

(*Tables A. to C., September, with Monthly Wind and Weather Charts.*)

*Wind.*—The predominant winds during the month were from the Westward, the percentage of Easterly winds being everywhere small. The changes in direction were mainly governed by a series of depressions which passed near the northern portion of the kingdom, the wind backing to the Southward with their approach, and veering to West or North as they travelled away. On the morning of the 1st a moderate North-westerly wind blew generally, but by the close of the day a Southerly breeze had set in in the west of Ireland, from whence it soon spread to the remainder of the kingdom, blowing strongly in the extreme west and north, but with moderate force elsewhere. After veering a little it backed again, and for a short time on the 4th it blew from the Eastward over the Channel, and then became light and variable. By the morning of the 6th a light Westerly breeze had again become established, and, with some intervals of calms or light variable airs, it blew from that quarter for some days. It then veered to North-west and North, and for a short time blew strongly over some parts of England, after which it again backed, and on the 15th blew from between South-west and South, and in the west and north rose to a gale. By the close of the 15th the wind had once more veered, and for some days moderate to strong Westerly winds prevailed; on the 20th, however, a further shift took place to North, but was soon followed by a new retrograde movement, and on the 22nd a Southerly wind had again become general, and in places blew strongly. In the north of the kingdom this backed to the Eastward, but in the south it veered to North-west, after which it became light and variable generally. On the 25th the wind circulated round a depression off the north-west of Scotland, and till the 28th the prevailing direction was from between West and North. On the 29th it was again light for a short time, but on the following morning it had freshened and become Easterly over Scotland, while it was Westerly over the greater part of England and Ireland, and, with only slight variation, these conditions continued throughout the day.

*Pressure.*—The mean pressure varied from rather above 30·0 inches along the south coast of England to about 29·7 inches in the north of Scotland, and to rather below that point in the Shetlands, and was, therefore, not very different from the average for the month; while its distribution, as shown by the isobars on the monthly chart, was in conformity with the general Westerly winds experienced. The range, although nowhere very great, was greatest in the north, being at Aberdeen nearly double what it was at Falmouth; the lowest readings were generally recorded on the 15th, but in the south of England on the 23rd, while the highest readings were reached at different stations on the 2nd, 10th, or 12th.

*Movements of the Depressions.*—Some of the depressions observed were rather large and deep, and travelled in a north-easterly direction past our northern coasts to Scandinavia; but on the 23rd one system moved in a south-easterly path across Great Britain to the Netherlands, and still later a very shallow one passed to the eastward across northern England. Throughout the greater part of the month pressure was highest to the south-west or south to the British Islands, the centre of one anticyclonic system moving slowly north-eastwards to Scandinavia, while another disappeared over Germany.

*Temperature.*—The mean values, which were generally a little higher than the average, varied from 60° in the south-west of England and 59° along the Channel to 54° in the north of Scotland. The highest readings were most generally recorded about the 5th or 6th, but in some places not till the 11th, while the lowest temperatures occurred either on the 24th or within a day or two of that date. The range of temperature was considerable, and exceeded 40° at some stations in southern, eastern, and central England, while it amounted to nearly as much at many others in England and to about 30° elsewhere.

*Vapour Tension* was greatest in the south-west of England, and at a few stations on the south-east coast, and least at the stations in the extreme north; over the greater part of the United Kingdom the mean value was about ·36 inch or ·38 inch. *Relative Humidity* did not show any great differences, but it may be generalized as low over the northern and southern portions of the kingdom, with rather higher values at some of the central stations.

*Rainfall.*—Over England and the greater part of Ireland the rainfall was as a rule less than the average, while at the northern stations it was about equal to it. At two midland stations, Buxton and Hereford, the total fall was exceptionally large as compared with neighbouring stations, and at Hereford on the 7th the large fall of 2·75 inches was recorded; at Buxton and a few other stations falls of upwards of an inch in 24 hours were recorded, but heavy falls were not at all common.

TABLE A.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of SEPTEMBER 1878; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE In the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation = 100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia | 29·986 | 29·389 | 15th, 11 a.m. | 30·340 | 12th, 10 p.m. | 0·951 | 58·1 | 47·5 | 23rd, 1 a.m.<br>1 p.m. | 69·0 | 4th, 3 p.m. | 21·5 | ·403 | 82 | 3·840 |
| Armagh | ·916 | 29·141 | 15th, 11 a.m. | ·272 | 12th 11 p.m. | 1·131 | 55·4* | 39·9 | 23rd, 7 a.m. | 69·0 | 5th, 3 p.m. | 29·1 | ·377 | 86 | 4·140 |
| Glasgow | ·828 | 28·951 | 15th, Noon | ·176† | 10th, Noon | 1·225 | 54·2 | 41·5 | 26th, 2 a.m. | 68·6 | 8th, 3 p.m. | 27·1 | ·337 | 80 | 5·208 |
| Aberdeen | 29·806 | 28·751 | 15th, Midt. | ·179 | 2nd, 7 a.m. | 1·428 | 54·3 | 39·0 | 26th, 5 a.m. | 70·9 | 3rd, 3 p.m. | 31·9 | ·325 | 77 | 3·485 |
| Falmouth | 30·049 | 29·523 | 23rd, 4 a.m.<br>5 a.m. | ·331 | 2nd, 10 a.m.<br>11 a.m. | 0·808 | 58·7 | 48·7 | 24th, 6 a.m. | 69·5 | 6th, 2 p.m. | 20·8 | ·401 | 81 | 3·725 |
| Stonyhurst | 29·921 | ·217 | 15th, 4 p.m. | ·268 | 10th, 9 p.m. | 1·051 | 55·0 | 35·6‡ | 24th, ? | 68·5 | 5th, 2 p.m. | 32·9 | ·362 | 84 | 6·255 |
| Kew | 29·995 | 29·463 | 23rd, 3 p.m. | 30·309 | 2nd, Noon | 0·846 | 56·3 | 37·0 | 24th, 6 a.m. | 71·9 | 7th, 4 p.m. | 34·9 | ·374 | 82 | 0·970 |

* Mean for one day is approximate. † Approximate reading, trace faint. ‡ Corrected reading of Rutherford's minimum thermometer.

TABLE B., SEPTEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not
(The Stations are grouped in Districts, and then arranged in order of

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Means of | | | Absolute Extremes. | | | |
| | | | | | | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| 0. SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·715 | 53·6 | 52·0 | 52·8 | 49·4 | 57·5 | 53·5 | 42·6 | 21st | 65·0 | 8th |
| 1. SCOTLAND, E. | Glenalmond | 29·832 | 54·1 | 50·7 | 52·4 | 46·6 | 60·5 | 53·6 | 38·5 | 28th | 68·7 | 7th |
| 2. ENGLAND, N.E. | Seaham | 29·873 | 57·4 | 53·2 | 55·3 | 48·6 | 62·7 | 55·7 | 40·7 | 24th | 73·5 | 11th |
| | Durham* | 29·876 | 57·7 | 51·4 | 54·6 | 47·4 | 63·6 | 55·5 | 36·3 | 24th | 73·8 | 6th |
| | Hull | 29·941 | 56·8 | 54·6 | 55·7 | 49·6 | 64·5 | 57·1 | 37·5 | 24th | 75·5 | 4th |
| | Kelstern 𝔐 | 29·947 | 56·0 | 52·0 | 54·0 | 47·1 | 62·9 | 55·0 | 36·0 | 26th | 73·4 | 6th |
| 3. ENGLAND, E. | Hillington 𝔐 | 29·955 | 58·2 | 53·2 | 55·7 | 46·6 | 64·6 | 55·6 | 34·0 | 21st | 75·3 | 5th |
| | Audley End 𝔐 | 29·964 | 58·1 | 53·5 | 55·8 | 46·6 | 64·8 | 55·7 | 32·2 | 24th | 75·1 | 5th, 7th |
| | Chigwell Row | 30·021 | 57·0 | 55·8 | 56·4 | 49·3 | 62·8 | 56·1 | 38·7 | 24th | 70·5 | 5th |
| 4. MIDLAND COUNTIES. | Wakefield 𝔐 | 29·929 | 56·9 | 53·7 | 55·3 | 48·5 | 63·5 | 56·0 | 36·0 | 21st | 72·8 | 3rd, 11th |
| | Buxton 𝔐 | 29·975 | 54·2 | 50·9 | 52·6 | 45·9 | 60·1 | 53·0 | 32·6 | 24th | 69·0 | 4th |
| | Cheadle 𝔐 | 29·965 | 54·5 | 52·2 | 53·4 | 47·9 | 60·9 | 54·4 | 38·6 | 20th | 69·3 | 6th |
| | Leicester | 29·964 | 56·2 | 55·2 | 55·7 | 48·4 | 62·9 | 55·7 | 33·6 | 24th | 70·6 | 11th |
| | Uppingham | 29·961 | 55·6 | 53·0 | 54·3 | 47·4 | 62·9 | 55·2 | 38·1 | 26th | 74·5 | 5th |
| | Oscott | 29·967 | 55·4 | 53·1 | 54·3 | 48·2 | 63·2 | 55·7 | 34·9 | 24th | 72·7 | 11th |
| | Churchstoke 𝔐 | 29·998 | 55·6 | 52·4 | 54·0 | 47·1 | 62·6 | 54·9 | 33·9 | 24th | 71·2 | 11th |
| | Hereford 𝔐 | 29·983 | 56·6 | 53·6 | 55·1 | 48·0 | 63·7 | 55·9 | 33·9 | 24th | 72·7 | 6th |
| 5. ENGLAND, S. | Marlborough 𝔐 | 30·018 | 57·8 | 53·2 | 55·5 | 47·0 | 65·6 | 56·3 | 32·7 | 24th | 73·4 | 11th |
| | Strathfield Turgiss 𝔐 | 30·016 | 57·9 | 53·1 | 55·5 | 45·8 | 66·5 | 56·2 | 30·5 | 24th | 74·9 | 8th |
| | Ramsgate 𝔐 | 30·018 | 59·6 | 56·7 | 58·2 | 51·5 | 65·0 | 58·3 | 41·1 | 24th | 73·3 | 6th |
| | Folkestone | 30·008 | 59·8 | 55·6 | 57·7 | 50·6 | 65·6 | 58·1 | 43·2 | 27th | 73·6 | 10th |
| | Southampton† | 30·024 | 59·6 | 55·4 | 57·5 | 49·6 | 64·5 | 57·1 | 35·9 | 24th | 71·9 | 7th |
| | Hastings | 30·014 | 59·2 | 56·1 | 57·7 | 51·2 | 64·2 | 57·7 | 42·6 | 21st | 70·1 | 11th |
| 6. SCOTLAND, W. | —— | — | — | — | — | — | — | — | — | — | — | — |
| 7. ENGLAND, N.W. | Douglas | 29·903 | 57·3 | 53·5 | 55·4 | 49·0 | 60·5 | 54·8 | 39·0 | 21st | 67·5 | 8th |
| | Prestwich | 29·935 | 54·4 | 52·8 | 53·6 | 48·3 | 61·4 | 54·9 | 37·3 | 24th | 70·2 | 5th |
| | Llandudno 𝔐 | 29·943 | 58·9 | 55·5 | 57·2 | 52·4 | 65·2 | 58·8 | 43·0 | 24th | 73·2 | 5th |
| 8. ENGLAND, S.W. | Caermarthen 𝔐 | 29·998 | 58·5 | 55·9 | 57·2 | 48·6 | 66·8 | 57·7 | 38·5 | 26th | 73·6 | 5th |
| | Dartmoor 𝔐 | 30·031 | 54·1 | 51·1 | 52·6 | 46·8 | 58·7 | 52·8 | 38·8 | 26th | 70·0 | 5th |
| | Babbacombe 𝔐 | 30·036 | 59·7 | 54·3 | 57·0 | 50·2 | 64·7 | 57·5 | 42·0 | 24th | 71·8 | 8th |
| 9. IRELAND, N. | Markree Castle | 29·910 | 56·6 | 53·2 | 54·9 | 48·5 | 61·9 | 55·2 | 39·3 | 23rd | 70·7 | 3rd, 4th |
| 10. IRELAND, S. | Dublin | 29·957 | 56·8 | 55·4 | 56·1 | 50·8 | 62·5 | 56·7 | 40·0 | 21st | 67·7 | 11th |
| | Parsonstown | 29·965 | 57·1 | 54·0 | 55·6 | 49·9 | 63·3 | 56·6 | 35·4 | 21st | 71·1 | 5th |
| CHANNEL | Jersey (St. Aubin's) | 30·098 | 62·2 | 58·1 | 60·2 | 54·9 | 67·1 | 61·0 | 47·0 | 24th | 73·7 | 10th |

NOTE.—The stations marked thus 𝔐 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

**Stations** of the **Second Order** in the **British Islands**, during the Month of **September** 1878, corrected for Diurnal Range.
Latitude, beginning in each case with the Station lying furthest North.)

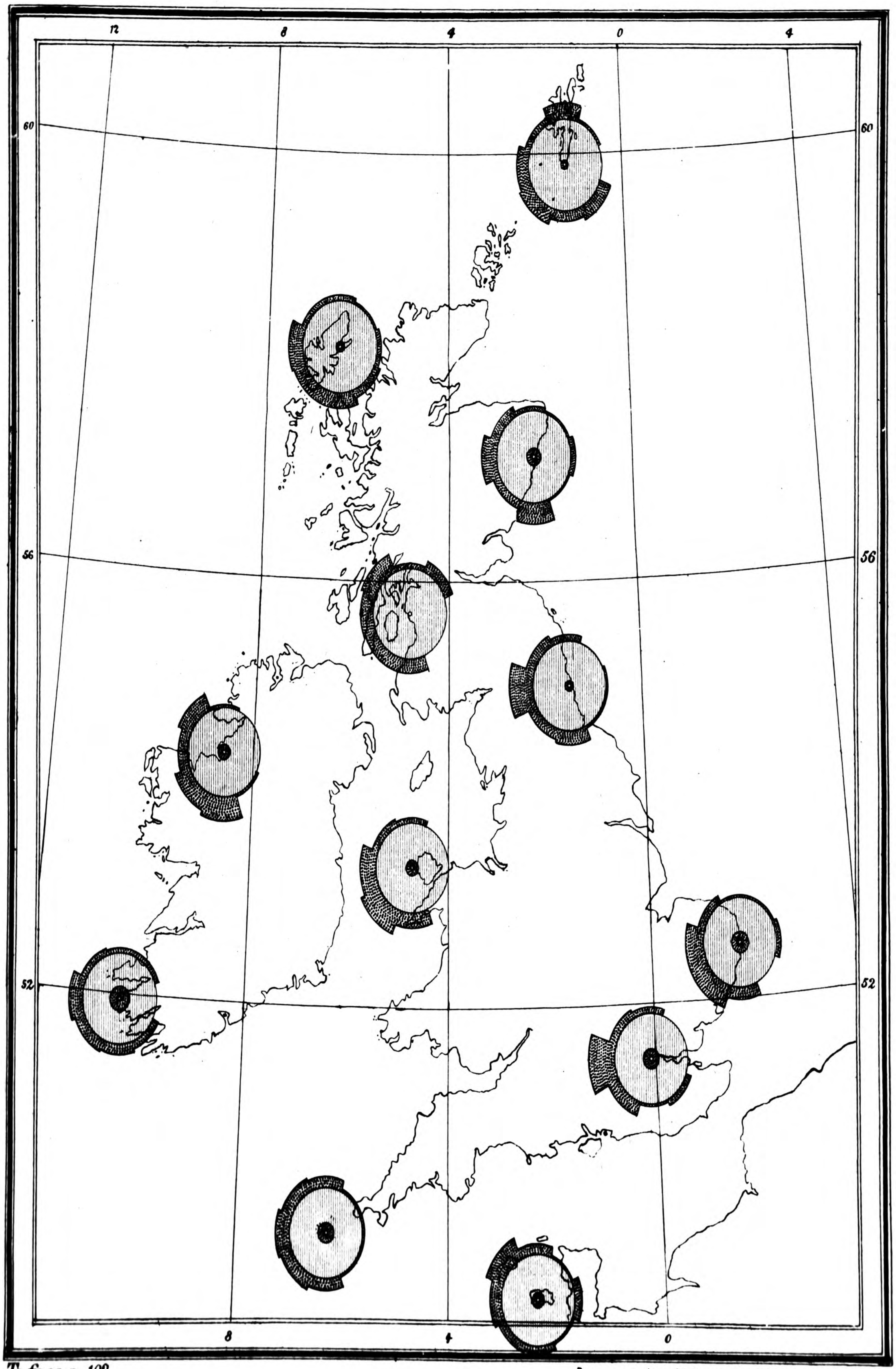
| Tension of Vapour. | | | Relative Humidity. | | | Amount of Cloud (0 to 10). | | | Rainfall. | | | Weather. No. of Days of | | | | | | | Wind. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·328 | ·313 | ·321 | 79 | 81 | 80 | 6·7 | 7·5 | 7·1 | 5·900 | 1·180 | 24th | 22 | 0 | 2 | 0 | 2 | 12 | 4 | 4 | 1 | 1 | 8 | 9 | 9 | 14 | 9 | 5 |
| ·352 | ·333 | ·343 | 84 | 88 | 86 | 5·7 | 6·4 | 6·1 | 4·126 | ·810 | 15th | 18 | 0 | 0 | 0 | 2 | 10 | 4 | 1 | 1 | 11 | 1 | 6 | 15 | 20 | 4 | 1 |
| ·381 | ·355 | ·368 | 81 | 88 | 85 | 5·9 | 4·6 | 5·3 | 1·877 | ·450 | 19th | 13 | 0 | 0 | 0 | 4 | 7 | 1 | 2 | 2 | 0 | 0 | 4 | 17 | 17 | 2 | 16 |
| ·387 | ·350 | ·369 | 80 | 90 | 85 | 7·2 | 5·8 | 6·5 | 2·337 | ·540 | 22nd | 12 | 0 | 0 | 0 | 2 | 11 | 0 | 5 | 2 | 0 | 0 | 12 | 20 | 11 | 6 | 4 |
| ·391 | ·375 | ·383 | 84 | 89 | 87 | 6·6 | 5·6 | 6·1 | 2·290 | ·370 | 30th | 13 | 0 | 0 | 0 | 2 | 9 | 2 | 2 | 0 | 0 | 1 | 6 | 17 | 12 | 5 | 17 |
| ·379 | ·361 | ·370 | 84 | 92 | 88 | 6·4 | 4·7 | 5·6 | 1·970 | ·335 | 15th | 15 | 0 | 0 | 3 | 4 | 10 | 1 | 1 | 2 | 2 | 6 | 3 | 14 | 16 | 13 | 3 |
| ·458 | ·406 | ·432 | 93 | 99 | 96 | 6·3 | 4·3 | 5·3 | 1·961 | ·347 | 29th | 14 | 0 | 0 | 2 | 4 | 6 | 2 | 1 | 1 | 7 | 0 | 14 | 9 | 19 | 4 | 5 |
| ·389 | ·377 | ·383 | 80 | 90 | 85 | 5·6 | 3·8 | 4·7 | 0·970 | ·230 | 17th | 14 | 0 | 0 | 2 | 7 | 6 | 0 | 0 | 1 | 1 | 1 | 9 | 17 | 7 | 16 | 8 |
| ·377 | ·378 | ·378 | 81 | 84 | 83 | 7·1 | 5·5 | 6·3 | 0·700 | ·150 | 17th | 9 | 0 | 0 | 0 | 3 | 8 | 0 | 6 | 1 | 4 | 4 | 6 | 8 | 17 | 6 | 8 |
| ·377 | ·365 | ·371 | 81 | 87 | 84 | 6·6 | 5·2 | 5·9 | 2·550 | ·450 | 29th | 12 | 0 | 0 | 2 | 3 | 7 | 1 | 3 | 1 | 2 | 3 | 7 | 10 | 23 | 3 | 8 |
| ·361 | ·341 | ·351 | 86 | 90 | 88 | 7·4 | 5·3 | 6·4 | 5·193 | 1·200 | 17th | 17 | 0 | 0 | 1 | 2 | 9 | 0 | 4 | 3 | 1 | 0 | 0 | 5 | 18 | 26 | 3 |
| ·370 | ·358 | ·364 | 87 | 92 | 89 | 6·8 | 4·3 | 5·5 | 2·830 | ·620 | 22nd | 12 | 0 | 1 | 0 | 5 | 9 | 5 | 4 | 1 | 4 | 3 | 10 | 6 | 20 | 12 | 0 |
| ·370 | ·373 | ·372 | 82 | 86 | 84 | 7·6 | 5·5 | 6·6 | 1·820 | ·450 | 7th | 14 | 0 | 0 | 2 | 3 | 12 | 1 | 2 | 2 | 0 | 0 | 4 | 20 | 14 | 6 | 12 |
| ·375 | ·368 | ·372 | 84 | 90 | 87 | 7·6 | 5·8 | 6·7 | 1·120 | ·274 | 25th | 8 | 0 | 0 | 3 | 3 | 15 | 3 | 1 | 0 | 0 | 1 | 4 | 11 | 16 | 13 | 14 |
| ·385 | ·372 | ·379 | 87 | 91 | 89 | 8·7 | 4·0 | 6·4 | 1·700 | ·370 | 22nd | 14 | 0 | 0 | 2 | 1 | 9 | 2 | 3 | 2 | 2 | 4 | 5 | 19 | 9 | 11 | 5 |
| ·376 | ·350 | ·363 | 85 | 88 | 86 | 6·8 | 4·6 | 5·7 | 2·449 | ·676 | 22nd | 13 | 0 | 0 | 3 | 2 | 5 | 0 | 4 | 1 | 1 | 1 | 2 | 15 | 15 | 16 | 5 |
| ·381 | ·365 | ·373 | 83 | 87 | 85 | 6·8 | 3·7 | 5·3 | 4·175 | 2·750 | 7th | 13 | 0 | 1 | 2 | 3 | 6 | 0 | 1 | 1 | 0 | 0 | 1 | 3 | 20 | 7 | 27 |
| ·397 | ·384 | ·391 | 83 | 93 | 88 | 6·6 | 4·6 | 5·6 | 1·761 | ·630 | 22nd | 13 | 0 | 0 | 1 | 5 | 10 | 0 | 1 | 1 | 0 | 0 | 2 | 12 | 4 | 3 | 37 |
| ·398 | ·384 | ·391 | 83 | 94 | 88 | 6·1 | 4·4 | 5·3 | 0·749 | ·235 | 17th | 8 | 0 | 0 | 0 | 5 | 8 | 0 | 0 | 0 | 2 | 2 | 1 | 16 | 16 | 10 | 13 |
| ·416 | ·407 | ·412 | 81 | 87 | 84 | 5·4 | 4·8 | 5·1 | 2·038 | ·440 | 8th | 13 | 0 | 0 | 1 | 5 | 7 | 2 | 0 | 2 | 0 | 0 | 1 | 23 | 10 | 8 | 16 |
| ·413 | ·400 | ·407 | 80 | 90 | 85 | 4·9 | 4·8 | 4·9 | 1·850 | ·920 | 19th | 12 | 0 | 0 | 1 | 7 | 7 | 2 | 9 | 2 | 4 | 1 | 4 | 12 | 13 | 10 | 5 |
| ·379 | ·390 | ·385 | 74 | 88 | 81 | 6·6 | 5·4 | 6·0 | 1·490 | ·426 | 22nd | 14 | 0 | 0 | 1 | 6 | 12 | 2 | 2 | 6 | 0 | 3 | 2 | 23 | 8 | 14 | 2 |
| ·394 | ·396 | ·395 | 77 | 87 | 82 | 4·1 | 3·9 | 4·0 | 1·985 | ·735 | 19th | 12 | 0 | 1 | 0 | 12 | 7 | 4 | 8 | 7 | 2 | 2 | 3 | 10 | 16 | 7 | 5 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·399 | ·376 | ·388 | 84 | 91 | 87 | 6·8 | 5·9 | 6·4 | 3·755 | ·675 | 22nd | 18 | 0 | 1 | 3 | 1 | 7 | 2 | 1 | 1 | 2 | 0 | 6 | 12 | 16 | 9 | 13 |
| ·378 | ·362 | ·370 | 89 | 91 | 90 | 7·6 | 4·9 | 6·3 | 4·784 | ·940 | 17th | 18 | 0 | 0 | 1 | 3 | 7 | 0 | 3 | 2 | 0 | 0 | 9 | 7 | 10 | 7 | 22 |
| ·389 | ·370 | ·380 | 78 | 83 | 80 | 6·8 | 4·4 | 5·6 | 3·750 | ·710 | 29th | 16 | 0 | 1 | 0 | 4 | 10 | 1 | 6 | 2 | 3 | 0 | 1 | 3 | 38 | 7 | 0 |
| ·411 | ·389 | ·400 | 84 | 92 | 88 | 7·1 | 6·6 | 6·9 | 3·730 | 1·660 | 22nd | 17 | 0 | 0 | 0 | 2 | 12 | 0 | 1 | 0 | 3 | 1 | 1 | 13 | 14 | 6 | 21 |
| ·364 | ·355 | ·360 | 86 | 94 | 90 | 7·4 | 5·9 | 6·7 | 5·210 | 1·550 | 22nd | 18 | 0 | 0 | 0 | 2 | 10 | 2 | 0 | 0 | 7 | 0 | 4 | 3 | 11 | 20 | 15 |
| ·403 | ·385 | ·394 | 78 | 90 | 84 | 6·5 | 5·0 | 5·8 | 1·730 | ·760 | 22nd | 11 | 0 | 0 | 0 | 4 | 8 | 0 | 4 | 1 | 5 | 2 | 1 | 13 | 23 | 9 | 2 |
| ·388 | ·374 | ·381 | 84 | 91 | 88 | 8·3 | 7·2 | 7·8 | 4·178 | ·710 | 23rd | 24 | 0 | 1 | 0 | 0 | 15 | 0 | 2 | 0 | 0 | 3 | 13 | 13 | 6 | 10 | 13 |
| ·389 | ·382 | ·386 | 83 | 86 | 84 | 6·5 | 5·9 | 6·2 | 1·684 | ·479 | 29th | 16 | 0 | 0 | 1 | 2 | 7 | 2 | 2 | 0 | 3 | 2 | 5 | 12 | 22 | 11 | 3 |
| ·406 | ·385 | ·396 | 86 | 91 | 88 | 7·5 | 6·3 | 6·9 | 3·126 | ·762 | 21st | 20 | 0 | 1 | 0 | 3 | 14 | 0 | 1 | 0 | 3 | 4 | 8 | 9 | 8 | 6 | 21 |
| ·417 | ·411 | ·414 | 74 | 84 | 79 | 6·6 | 4·0 | 5·3 | 2·467 | ·668 | 18th | 15 | 0 | 0 | 0 | 2 | 3 | 0 | 4 | 8 | 4 | 4 | 2 | 10 | 4 | 15 | 9 |

# TABLE C., SEPTEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of SEPTEMBER 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. | | | | | | | | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Means of | | | Absolute Extremes. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | At 8 a.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. | | | | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| 0. SCOTLAND, N. | Sumburgh Head | 29·670 | 51·7 | 47·7 | 56·3 | 52·0 | 38 | 30th | 65 | 4th | 0·329 | 86 | 8·1 | 5·18 | 1·17 | 25th | 20 | 0 | 0 | 0 | 2 | 17 | 3 | 6 | 1 | 0 | 5 | 4 | 6 | 5 | 2 | 1 |
| | Thurso | 29·720 | 52·7 | 47·9 | 60·7 | 54·3 | 36 | 21st | 71 | 4th | ·351 | 88 | 7·5 | 5·01 | 0·65 | 24th | 25 | 0 | 1 | 0 | 3 | 14 | 1 | 3 | 0 | 2 | 3 | 4 | 3 | 11 | 2 | 2 |
| | Wick | 29·714 | 52·9 | 46·9 | 59·7 | 53·3 | 33 | 21st | 68 | 4th | ·341 | 85 | 6·9 | 3·13 | 0·51 | 24th | 19 | 0 | 0 | 0 | 8 | 17 | 1 | 2 | 0 | 2 | 2 | 5 | 7 | 5 | 7 | 0 |
| | Stornoway | 29·698 | 53·1 | 47·7 | 57·0 | 52·4 | 41 | 21st, 26th | 67 | 1st | ·365 | 90 | 5·9 | 4·19 | 0·85 | 15th | 24 | 0 | 0 | 0 | 6 | 6 | 6 | 2 | 1 | 2 | 3 | 6 | 6 | 7 | 2 | 1 |
| 1. SCOTLAND, E. | Nairn | 29·764 | 53·0 | 47·9 | 61·3 | 54·6 | 40 | 26th | 72 | 8th | ·337 | 84 | 4·9 | 2·93 | 0·71 | 15th | 20 | 0 | 0 | 0 | 9 | 7 | 1 | 0 | 0 | 1 | 0 | 5 | 9 | 5 | 3 | 7 |
| | Aberdeen | 29·780 | 53·3 | 48·6 | 61·3 | 55·0 | 37 | 26th | 72 | 3rd, 6th | ·341 | 83 | 4·8 | 3·39 | 1·00 | 29th | 14 | 0 | 0 | 0 | 12 | 8 | 4 | 2 | 1 | 2 | 1 | 8 | 3 | 7 | 4 | 2 |
| | Leith | 29·826 | 54·9 | 49·6 | 63·4 | 56·5 | 42 | 21st | 72 | 5th | ·368 | 86 | 4·8 | 2·62 | 0·65 | 29th | 17 | 0 | 0 | 0 | 12 | 8 | 2 | 1 | 4 | 2 | 1 | 0 | 5 | 13 | 4 | 0 |
| 2. ENGLAND, N.E. | Shields | 29·860 | 54·9 | 50·0 | 61·4 | 55·7 | 40 | 20th, 21st | 72 | 6th, 11th | ·358 | 84 | 6·7 | 1·62 | 0·47 | 15th | 15 | 0 | 0 | 0 | 9 | 18 | 6 | 2 | 0 | 1 | 1 | 5 | 4 | 12 | 4 | 1 |
| | Scarborough | 29·893 | 55·3 | 51·3 | 60·5 | 55·9 | 42 | 21st, 26th | 71 | 6th | ·372 | 85 | 6·5 | 1·42 | 0·36 | 15th | 12 | 0 | 0 | 0 | 8 | 14 | 3 | 2 | 0 | 2 | 1 | 5 | 6 | 10 | 4 | 0 |
| | York | 29·906 | 53·8 | 48·5 | 63·3 | 55·9 | 37 | 21st, 24th | 72 | 6th, 11th | ·366 | 88 | 6·1 | 2·64 | 0·44 | 25th | 15 | 0 | 0 | 0 | 10 | 14 | 3 | 2 | 1 | 2 | 0 | 7 | 5 | 11 | 2 | 0 |
| 3. ENGLAND, E. | Yarmouth | 29·947 | 56·1 | 50·8 | 62·6 | 56·7 | 41 | 21st | 74 | 6th | ·407 | 90 | 4·8 | 2·86 | 0·80 | 12th | 19 | 0 | 0 | 0 | 14 | 8 | 3 | 1 | 1 | 2 | 0 | 4 | 8 | 8 | 3 | 3 |
| | Cambridge | 29·972 | 54·5 | 48·1 | 66·4 | 57·3 | 35 | 24th | 78 | 7th | ·376 | 89 | 6·8 | 0·82 | 0·21 | 29th | 10 | 0 | 0 | 1 | 7 | 14 | 0 | 2 | 0 | 1 | 0 | 1 | 13 | 5 | 4 | 4 |
| 4. MIDLAND COUNTIES. | Nottingham | 29·944 | 55·4 | 47·5 | 66·7 | 57·1 | 34 | 24th | 78 | 6th | ·395 | 90 | 6·0 | 1·53 | 0·23 | 29th | 16 | 0 | 0 | 2 | 8 | 11 | 4 | 0 | 1 | 0 | 0 | 6 | 8 | 3 | 3 | 9 |
| | Oxford | 29·987 | 53·9 | 48·7 | 64·0 | 56·4 | 34 | 24th | 72 | 3rd | ·353 | 85 | 7·1 | 1·31 | 0·34 | 19th | 11 | 0 | 0 | 1 | 7 | 17 | 0 | 2 | 0 | 0 | 0 | 1 | 13 | 7 | 2 | 5 |
| 5. ENGLAND, S. | London | 29·995 | 55·6 | 48·8 | 66·3 | 57·6 | 39 | 24th | 75 | 7th, 11th | ·374 | 84 | 5·4 | 0·82 | 0·15 | 17th | 10 | 0 | 0 | 0 | 10 | 9 | 2 | 2 | 0 | 0 | 2 | 1 | 5 | 14 | 3 | 3 |
| | Dover | 29·993 | 58·2 | 53·8 | 64·0 | 58·9 | 45 | 21st, 24th | 70 | 6th | ·401 | 82 | 2·8 | 0·66 | 0·19 | 15th | 12 | 0 | 0 | 0 | 18 | 2 | 1 | 4 | 0 | 1 | 0 | 0 | 9 | 6 | 8 | 2 |
| | Hurst Castle | 30·011 | 58·3 | 51·6 | 66·1 | 58·9 | 42 | 21st, 24th, 26th | 72 | 6th | ·423 | 86 | 4·4 | 1·71 | 0·40 | 22nd | 12 | 0 | 0 | 2 | 13 | 5 | 2 | 5 | 3 | 4 | 0 | 0 | 3 | 8 | 7 | 0 |
| 6. SCOTLAND, W. | Ardrossan | 29·825 | 55·4 | 52·6 | 60·6 | 56·6 | 44 | 23rd | 70 | 5th | ·363 | 83 | 6·5 | 3·63 | 0·68 | 15th | 24 | 0 | 0 | 0 | 6 | 13 | 3 | 2 | 4 | 0 | 0 | 5 | 5 | 6 | 8 | 0 |
| 7. ENGLAND, N.W. | Liverpool | 29·923 | 56·1 | 53·0 | 61·6 | 57·3 | 46 | 19th, 24th | 70 | 5th | ·372 | 82 | 7·4 | 4·11 | 1·40 | 22nd | 17 | 0 | 0 | 0 | 4 | 15 | 1 | 0 | 1 | 1 | 6 | 3 | 7 | 11 | 1 | 0 |
| | Holyhead | 29·935 | 56·7 | 53·9 | 61·9 | 57·9 | 47 | 24th | 67 | 5th, 6th | ·395 | 86 | 6·8 | 3·96 | 0·88 | 29th | 20 | 0 | 0 | 0 | 5 | 12 | 3 | 2 | 0 | 0 | 0 | 5 | 10 | 8 | 3 | 2 |
| 8. ENGLAND, S.W. | Pembroke | 29·986 | 57·9 | 54·2 | 61·6 | 57·9 | 45 | 24th | 70 | 5th | ·400 | 83 | 6·1 | 1·92 | 0·56 | 22nd | 11 | 0 | 0 | 1 | 6 | 11 | 5 | 1 | 2 | 2 | 0 | 4 | 6 | 7 | 7 | 1 |
| | Portishead | 29·989 | 56·6 | 50·7 | 65·0 | 57·9 | 39 | 24th | 73 | 5th | ·394 | 85 | 6·5 | 3·27 | 1·26 | 22nd | 11 | 0 | 0 | 4 | 6 | 13 | 1 | 1 | 0 | 1 | 2 | 3 | 10 | 8 | 4 | 1 |
| | Plymouth | 30·029 | 56·6 | 51·5 | 64·9 | 58·2 | 41 | 26th | 72 | 5th | ·404 | 88 | 6·1 | 2·94 | 0·68 | 7th | 14 | 0 | 0 | 0 | 10 | 16 | 2 | 4 | 1 | 3 | 2 | 1 | 3 | 6 | 3 | 7 |
| 9. IRELAND, N. | Greencastle | 29·842 | 54·4 | 49·5 | 61·7 | 55·6 | 42 | 23rd | 72 | 5th | ·375 | 89 | 8·0 | 4·72 | 0·60 | 15th | 25 | 0 | 0 | 0 | 3 | 20 | 1 | 0 | 1 | 2 | 1 | 5 | 10 | 9 | 2 | 0 |
| | Donaghadee | 29·878 | 54·5 | 50·4 | 61·0 | 55·7 | 43 | 19th, 26th | 69 | 3rd | ·393 | 92 | 5·1 | 2·34 | 0·46 | 24th | 20 | 0 | 0 | 0 | 11 | 11 | 4 | 1 | 2 | 1 | 2 | 3 | 5 | 13 | 3 | 0 |
| 10. IRELAND, S. | Kingstown | 29·940 | 56·0 | 52·5 | 61·9 | 57·2 | 44 | 23rd | 68 | 3rd | ·378 | 84 | 5·7 | 1·92 | 0·59 | 29th | 15 | 0 | 0 | 1 | 7 | 7 | 4 | 0 | 0 | 0 | 1 | 2 | 1 | 14 | 4 | 8 |
| | Valencia | 29·989 | 58·3 | 53·0 | 63·1 | 58·1 | 46 | 13th, 23rd | 69 | 4th | ·409 | 83 | 7·7 | 3·75 | 0·56 | 21st | 27 | 0 | 0 | 0 | 1 | 14 | 3 | 2 | 2 | 0 | 2 | 4 | 5 | 7 | 3 | 5 |
| | Roche's Point | 30·000 | 57·2 | 52·1 | 64·0 | 58·1 | 44 | 21st, 24th, 26th. | 70 | 5th, 7th, 10th. | ·395 | 84 | 6·8 | 3·08 | 1·22 | 21st | 13 | 0 | 0 | 0 | 3 | 10 | 3 | 4 | 2 | 1 | 3 | 1 | 6 | 9 | 4 | 0 |
| CHANNEL ISLANDS | Scilly | 30·046 | 60·2 | 56·8 | 63·7 | 60·3 | 48 | 23rd | 70 | 6th, 10th | ·441 | 85 | 7·7 | 3·37 | 1·14 | 22nd | 16 | 0 | 1 | 0 | 2 | 13 | 4 | 4 | 1 | 1 | 1 | 4 | 5 | 6 | 5 | 3 |
| | Jersey | 30·037 | 59·8 | 55·5 | 64·6 | 60·1 | 48 | 24th | 72 | 11th | ·417 | 81 | 6·3 | 2·44 | 0·84 | 18th | 11 | 0 | 0 | 0 | 4 | 10 | 5 | 4 | 1 | 3 | 1 | 2 | 3 | 5 | 9 | 2 |

# MONTHLY WIND CHART FOR SEPTEMBER, 1878.

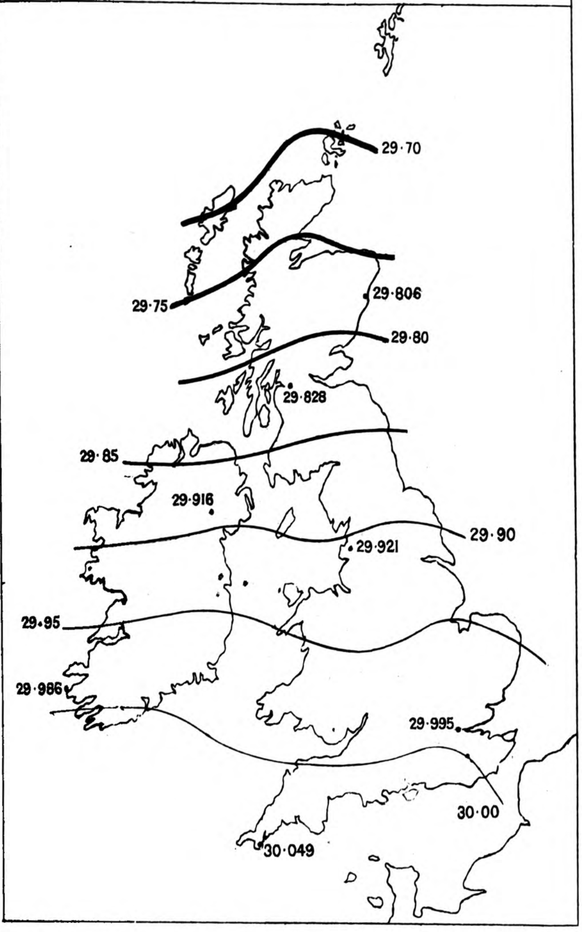

12
8
4
0
4
60
60
56
56
52
52
8
4
0

*To face p. 102.*

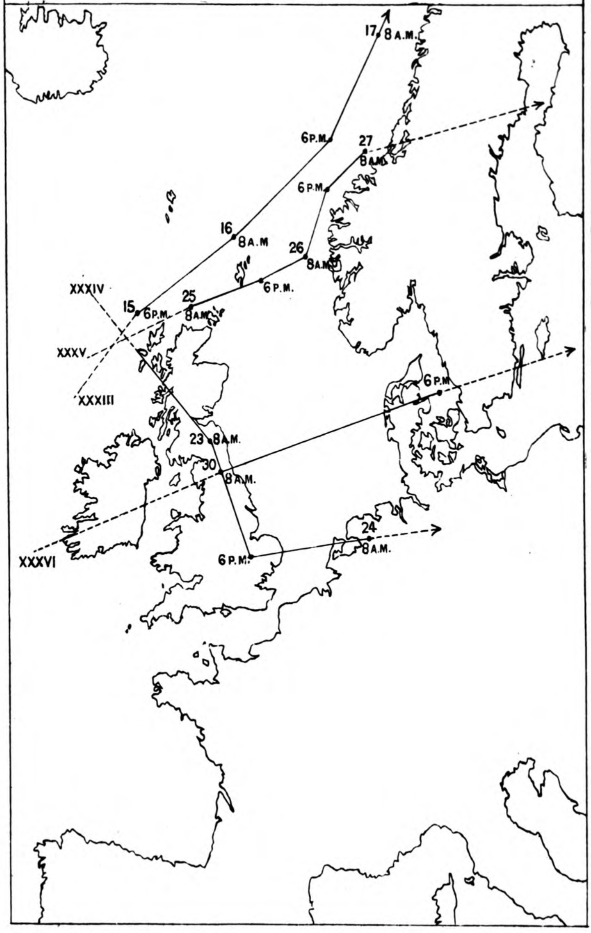
DANGERFIELD, LITH. 22, BEDFORD S^T. COVENT GARDEN. 13572 3. 81.

# MONTHLY WEATHER CHART, SEPTEMBER, 1878.

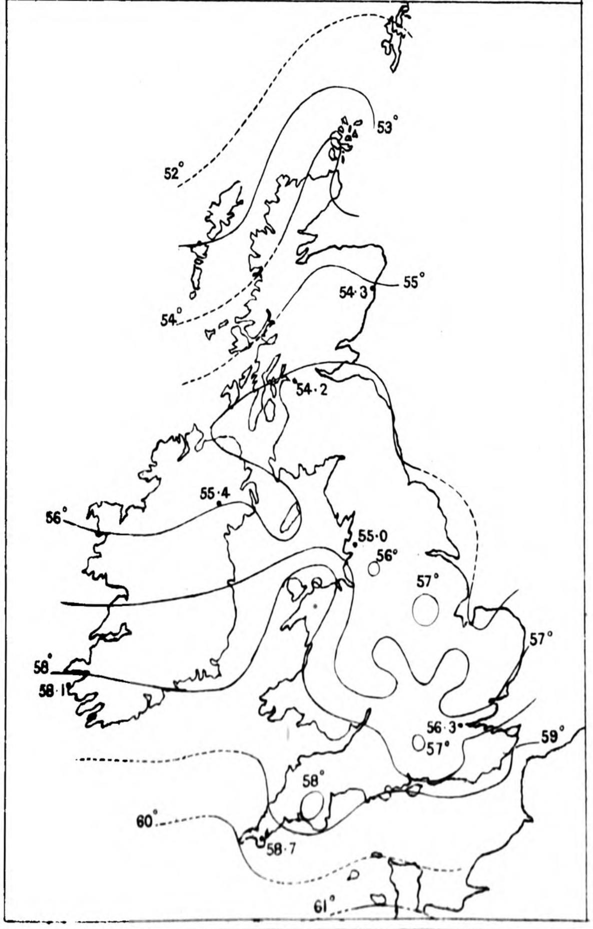
1. DISTRIBUTION OF MEAN PRESSURE


29·70
29·75
29·806
29·80
29·828
29·85
29·916
29·90
29·921
29·95
29·986
29·995
30·00
30·049

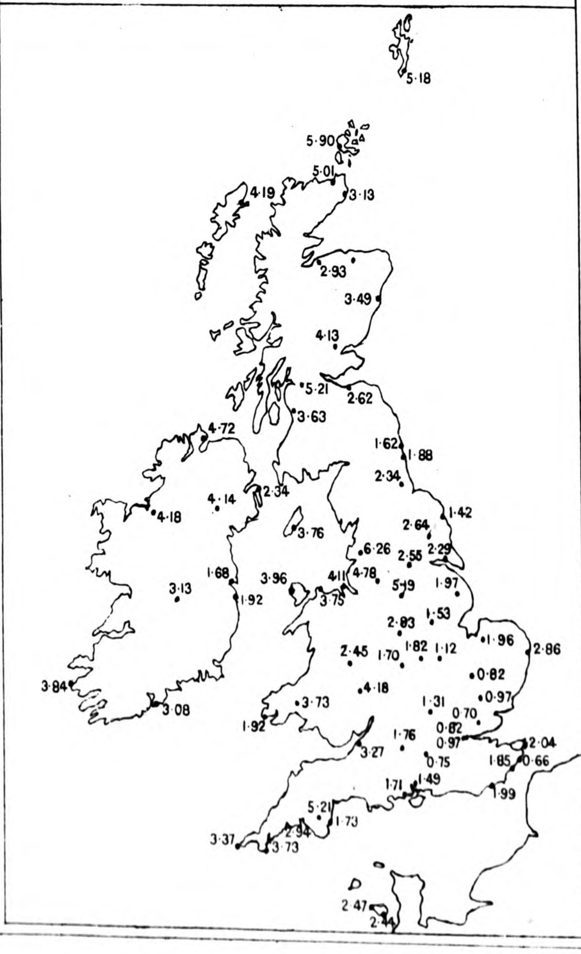
2. MOVEMENTS OF DEPRESSIONS.


17 8 A.M.
6 P.M.
27 8 A.M.
6 P.M.
16 8 A.M
26 8 A.M.
6 P.M.
XXXIV
15 6 P.M.
25 8 A.M.
XXXV
XXXIII
6 P.M.
23 8 A.M.
30 8 A.M.
24 8 A.M.
XXXVI
6 P.M.

3. DISTRIBUTION OF MEAN TEMPERATURE


53°
52°
55°
54·3
54°
54·2
55·4
56°
55·0
56°
57°
57°
58°
58·1
56·3
57°
59°
58°
60°
58·7
61°

4. RAINFALL


5·18
5·90
5·01
4·19
3·13
2·93
3·49
4·13
5·21
2·62
3·63
4·72
1·62
1·88
2·34
2·34
4·14
4·18
1·42
3·76
2·64
6·26
2·55
2·29
1·68
3·96
4·11
4·78
5·19
1·97
3·13
1·92
3·75
1·53
2·83
1·96
2·86
2·45
1·70
1·82
1·12
0·82
3·84
4·18
0·97
3·08
3·73
1·31
0·70
1·92
0·82
1·76
0·97
2·04
3·27
0·75
1·85
0·66
1·71
1·49
1·99
5·21
1·73
3·37
2·94
3·73
2·47
2·44

*To follow Wind Chart for September.*

DANGERFIELD LITH. 22, BEDFORD ST. COVENT GARDEN. 13572 3,8

# PART IV.

## SECTION I.

## GENERAL SUMMARY FOR THE QUARTER.

During the two last months of this quarter unusually low mean temperatures were very general; but in other respects the weather was, throughout, of a fairly seasonable character. A few deep depressions were observed, and the weather over the British Isles, was disturbed and unsettled during considerable intervals, but not more so than it commonly is at this season of the year. Anticyclonic conditions were not very common, and were generally but of brief duration.

October 1st–6th.—The quarter began with quiet and moderately fine weather, consequent upon the very uniform distribution of pressure which prevailed over the British Isles, and indeed over the greater part of western Europe, on the morning of the 1st. The barometer was then rising at all our stations, and an area of high pressure was approaching us from the south-west; while a shallow depression, which had crossed the north of England on the previous day, was still observed over the Baltic, but was travelling away towards the north-east. Twenty-four hours later the centre of the anticyclone had reached England, and light airs or calms were experienced all over the kingdom. Before the close of that day, however, the barometer had begun to fall, and it continued to do so steadily for some days; the system of high pressure meanwhile moving away to the eastward, while a large area of low readings became established upon our western coasts. With this change in the distribution of pressure the winds became Southerly, but continued moderate in force; while the weather became rather unsettled in the west and north-west. Elsewhere, however, it remained fine, and high temperatures for the season prevailed all over the United Kingdom.

October 7th–10th.—At most of our stations the barometer ceased to fall during the night of the 7th, when a deep and well-defined depression, No. XXXVII., travelling in a northerly direction, reached our south-western coasts. The centre of this system appears from the changes of wind shown on Plate LVI. to have passed during the night to the eastward of Valencia and to the westward of Armagh, and at 8 a.m. on the 8th it was observed a little to the northward of Ireland. From thence it continued its course to the northward, and skirting the Scottish coast, disappeared over the ocean; the barometer continuing to fall a little at our northern stations till the close of the day.

In the south-west of England and in Ireland a very brisk increase of pressure followed the passage of this disturbance. It was, however, only of brief duration, and before it had begun to be felt at Aberdeen, it had ceased at Valencia, and had been succeeded there by a fresh fall of the mercury. This latter movement quickly extended itself to all our stations, and preceded the approach of a second and deeper cyclonic system (No. XXXVIII.), which reached the neighbourhood of Valencia on the evening of the 9th. It then travelled in a north-easterly direction across the British Isles to the North Sea, its centre passing on the evening of the 10th a little to the southward of Aberdeen. Near the centre of this disturbance the barometer fell to below 28·7 inches, but the recovery of pressure which took place in its rear was very rapid, and proved to be of a more permanent character than that which had followed the preceding depression, while at the same time the wind veered to West and North-west and moderated, the weather improved, and temperature fell.

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October 11th-20th.—After reaching the North Sea the depression skirted the coast of Norway, and soon disappeared. The barometer continued to rise rapidly at all our stations throughout the 11th, and simultaneously a system of high pressure advanced from the Peninsula towards the north of France, and gradients decreased over the British Isles. The centre of the anticyclone did not at any time reach our coasts, but passed in a north-easterly direction over the Netherlands and Denmark to Sweden, where it remained till the 16th, when it passed beyond the limits of the area embraced by our observations. The change in the general distribution of barometrical pressure, which this movement of the anticyclone brought about, established gradients for Southerly winds over the United Kingdom, and the mercury fell slightly at our western and southern stations. A large area of low readings lay to the westward of Ireland, and through that region, during nearly the whole of this interval, depressions appear to have been passing in a northerly direction; consequently the steepness of the gradients over the British Isles varied a good deal, and the Southerly wind alternated in force from a gale to a light breeze, but on the whole with fine, and decidedly warm, weather. On the 20th, however, a very decided fall of the barometer set in, first at the northern stations, and later on all over the kingdom, and the weather became unsettled and threatening.

October 21st-31st.—An interval of very unsettled weather now ensued, during which some important depressions appeared over or near to the British Isles, travelling in most instances past our northern coasts, and so causing Westerly winds to prevail over the United Kingdom. The first of these (No. XXXIX.) arrived on the 21st, and was accompanied by a marked general fall of temperature, and by a shift of wind to West. Others of the series quickly followed, but passed outside our western coasts,—near enough, however, to keep the barometer low, and to cause very unsettled weather to prevail over the British Isles. On the 24th a small subsidiary depression (No. XL.) made its appearance in the south-west, and caused an abrupt fall of the barometer at all the southern stations as it passed eastwards to the North Sea. It was accompanied by strong gales and heavy rain over the Channel and the south of England, and after leaving our shores it grew deeper, and caused strong Southerly gales to blow over southern Scandinavia, where it was observed on the morning of the 25th. A somewhat similar depression (No. XLI.) followed on the 26th, but the accompanying fall of the barometer (which was again only felt at the southern stations) was not so rapid as in the preceding case, and in the rear of the disturbance a general increase of pressure took place. On the morning of the 28th the centre of another depression (No. XLII.) was observed near the Shetlands, and the rise of the barometer became checked all over the northern half of the Kingdom. The disturbance remained till the close of the month over the North Sea and Scandinavia, becoming in the interval partially filled up, and then passed away to the eastward. In the meanwhile the mercury oscillated somewhat at the northern stations till the close of the 29th, when it began to rise decidedly, but in the south-west it continued fairly steady and relatively high throughout. The rise of the barometer in the north and east diminished the steepness of the gradients for Northerly winds which had prevailed for some days, and with their decrease there came, at the close of the month, a decided improvement in the weather.

November 1st-10th.—The rise of the barometer now became general, and the area of high pressure to the westward of Ireland advanced towards our western coasts; but the general distribution of pressure remained unchanged, and the Northerly winds continued to blow with light or moderate strength. At the close of the 3rd the anticyclone receded again out to sea, and a general fall of the barometer set in in front of a depression which appeared over the Baltic. The fall was neither rapid nor great, and ceased on the 4th, and after a slight rise it was followed by another decrease which continued till near the close of the 6th. On the 7th, however, a more important fall began, first in the north-west, and the wind backed to West at most of our stations, while rain or snow fell pretty generally.

By the following morning the centre of the depression (No. XLIII.), to whose advance this movement of the barometer was due, had reached the north of England, and Easterly winds were blowing over Scotland, with Westerly winds over southern England. Strong Northerly winds, however, soon became general again as the disturbance travelled away towards Germany, the barometer once more rose briskly at all our stations, and over the Bay of Biscay a small anticyclone rapidly became developed. But this rise was again very short-lived, and before mid-day on the 9th a fresh fall had begun, which, at the north-western stations soon became extremely rapid, and was everywhere accompanied by a considerable increase of temperature. It was caused by the advance of a deep depression (No. XLIV.), whose centre reached Scotland during the ensuing night, and occasioned strong gales and heavy rain over the whole of the United Kingdom. After travelling slowly eastwards to the Norwegian coast, the path of the depression re-curved to the north-west, and the system again disappeared over the ocean.

November 11th–17th.—Only a slight recovery of pressure followed the passage of the depression just referred to, and unsettled weather continued for some days longer. A slight fall of the barometer occurred at most stations on the 11th, and a rather larger one next day in the south-west of England, due in both cases to small local disturbances, which, however, tended to bring about a very complicated system of pressure-distribution over western Europe. On the morning of the 13th there stretched from Spain to Norway a long narrow belt of low readings, in which several distinct low-pressure centres were observed. On the western side of this area the winds were strong from the Northward, while on the east—over Germany and the Baltic—they blew with moderate strength from the South. At first the small centres appeared to disperse or fill up, and the barometer rose pretty steadily over the British Isles; but towards the close of the 14th one of them, which had remained for some hours over north-eastern France and Belgium, began quickly to grow deeper, and by the following morning a severe North-easterly gale had set in on our north-eastern coasts, while strong Northerly winds were felt at some stations in the west. The system (No. XLV.) grew still deeper during the ensuing 24 hours, but remained nearly stationary; and although the barometer fell at most of our stations, the fall was nowhere rapid, and in the south-west it was only very slight. The disturbance began to fill up on the 16th, and a steady increase of pressure commenced at all our stations and continued for several hours; gradients gradually decreased, and by the close of the 17th the Northerly wind which still prevailed had fallen nearly everywhere to a moderate breeze, with finer weather.

November 18th–23rd.—This was an interval of much quieter anticyclonic weather. The depression had almost disappeared on the morning of the 18th, and an area of high pressure had begun to develop itself in the west. The rise of the barometer went on steadily and briskly throughout the day, and on the 19th a well-marked anticyclone had spread itself from Ireland across England and the German Ocean to Germany. With these conditions Easterly winds prevailed in the Channel and over France, and Westerly winds in the north; and although the barometer began to fall again on the 20th, and the anticyclone gradually became dispersed, yet the relative distribution of pressure remained practically unchanged for some days, with weather generally fine but foggy, cold over England but relatively warm over Scotland. On the 23rd a more decided decrease of pressure set in in the south-west, and the wind, which had been light and variable, freshened somewhat from the Eastward; and by the close of the day the fall of the mercury had become general all over the Kingdom.

November 24th–December 1st.—The mercury continued to fall steadily at all our stations till the close of the 24th, when a very shallow disturbance reached the south-west of England, travelling to the north-eastward. At the northern stations the fall did not cease till some hours later, when the disturbance had reached the North Sea, and nowhere was the recovery which followed it at all brisk. In the end a rather complicated distribution of pressure was established over western Europe, which became covered by a large band of low readings containing two or three distinct minima. The winds were generally light or moderate in force, and variable in direction, and the weather was cold. On the 27th a change took place, and the band of low pressure began to move very slowly eastwards. Simultaneously the barometer rose over the British Isles, and gradients for moderate to strong North-easterl winds (which in some places increased to a gale) became established. On the 29th condition had again become complex, and areas of relatively high readings were observed both to th south-west of our Islands and also over the northern Baltic and Finland, while one area low readings lay over our western coasts, and another and rather deeper one, having tw distinct minima, lay over Germany and the southern Baltic. These conditions were modifie a little during the following day, but not materially so until the 1st, when a shallo depression passed down our eastern coasts, and an area of high pressure began to develop t the westward of Ireland. This movement produced gradients for Northerly winds, which although generally moderate, blew in strong squalls at the mouth of the Channel.

December 2nd–17th.—The area of high pressure just referred to, as beginning to sho itself in the west, soon became united to another area lying over Scandinavia, and the increased quickly in height, so that on the 3rd a large anticyclone stretched from the Britis Isles to the Gulf of Finland. Some small oscillations of the barometer took place during th next two days, and the anticyclone moved to the south-west and began to diminish in height Simultaneously some shallow depressions appeared over Scandinavia and the Baltic, an gradients for Northerly winds became established over the British Isles. A more decide fall of the barometer occurred on the 6th, and the anticyclone disappeared entirely; but th relative distribution of pressure remained unchanged, and the area of low readings on th Continent became considerably enlarged. A moderately deep depression (No. XLVI.) reached the Baltic on the 11th, but passed away to the northward without affecting ou coasts. Later on, other centres of low pressure, generally of an unimportant character, wer observed, and one of them (No. XLVII.) caused a considerable movement of the barometer in the south-west of England on the 13th and 14th, although it was but little felt at our othe stations. But upon the whole the weather continued quiet, cold, and wintry; with a low barometer, which showed a tendency to fall still lower; and with light or moderate wind which blew as a rule from between North-east and North-west.

December 18th–31st.—A rather brisk fall of the barometer, which had begun at the northern stations on the 17th, now made itself felt all over the kingdom. It was due to a rathe deep depression (No. XLVIII.) whose centre lay over Scotland on the morning of the 18th, and which was travelling slowly eastwards towards the Baltic. This depression caused strong Westerly winds to blow over the greater part of the kingdom, but after it had passed to th North Sea gradients again became slight and the wind dropped. A slow recovery of pressur followed, but an area of low readings continued to exist to the northward of Great Britain, and therefore North-westerly and Northerly winds became very prevalent, and the temperature, which had risen a little, again became very low. At the close of the 23rd an anticyclone became rapidly developed on our western coasts, and was accompanied by light airs and very cold weather. The system covered the whole of the United Kingdom on the 24th, after which it moved quickly away to the Continent, and then disappeared. With this movement another brisk fall of the barometer took place. It began in the west on the 24th, and quickly becoming general, it continued till the 26th, by which time an area of low pressure had spread itself over the British Isles and adjacent regions; the wind at the same time becoming Southerly and South-easterly, and freshening. From this date till the close of the month the lowest readings kept to the westward and northward of our Islands, the gradients, which were at first slight, and for Southerly winds, becoming steeper and favourable for strong South-westerly or Westerly winds. Several depressions appear to have passed during the interval outside our coasts, and they caused considerable unsteadiness of the barometer; but their centres were too far off to allow of their being carefully observed. Under their influence, however, temperature rose generally, and during the last few days of the year mild, but dull and rainy, weather prevailed, the accompanying winds varying from South to West, and occasionally blowing with considerable force at some of our stations, and the barometer continuing low and unsteady.

## SECTION II.

### TABLE OF CYCLONIC SYSTEMS.—OCTOBER 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XXXVII. October 7-8. | No. XXXVIII. October 9-11. | No. XXXIX. October 21-22. |
|---|---|---|---|
| **Form** | Apparently circular | Elliptical | Apparently circular. |
| **Size** | Very large | Very large | Very large. |
| **Depth** | Deep | Very deep | Deep. |
| **Where first Observed** | To the south of Ireland | Off the south-west coast of Ireland | Western coast of Scotland. |
| **Direction of Motion** | Northerly | North-north-easterly | North-north-easterly. |
| **Rate of Motion** | Moderate | Moderate | Moderate. |
| **Regions passed over by Steepest Gradients.** | The British Isles and the North Sea | The British Isles and the North Sea | The British Isles, the North Sea, and Norway. |
| **Termination** | Disappeared to the northward of Scotland. | Disappeared over the ocean to the northward of Scotland. | Disappeared to the northward of Scotland. |
| **Time under Observation** | About 24 hours | A little more than 24 hours | Less than 24 hours. |
| **Accompanying Winds** | Generally Southerly, fresh or strong; in the south and west a strong Southerly gale was experienced. | Strong Southerly winds, veering to West; at the Channel, south-western, and western stations it blew a strong gale. | Strong Southerly winds, rising to a gale in the south-west and south, and then veering to West very generally. A South-easterly gale was felt in Norway on the 22nd. |
| **„ Weather** | Warm, but overcast and dull, with rain at nearly all our stations. | Wet, squally, and very unsettled, with thunder and lightning at many south-western stations. | Dull and unsettled, and in places foggy; turning to rain, and becoming much colder. |
| **„ Rainfall** | Very general, and in the south-west of Ireland, as well as at Kingstown and Donaghadee, very heavy. | Rain fell all over the kingdom, and at a few stations the fall was heavy. | Rain fell very generally, and at some stations, mainly on our western coasts, the falls were heavy. Hail fell at Pembroke. |
| **REMARKS** | The approach of this system was preceded by a long continued decrease of pressure, and it is probable that other areas of low pressure had for some days been passing to the northward, outside our western coasts. From the changes of wind shown on Plate LVI. it would appear that the centre of the present system passed over Ireland between Valencia and Armagh, and then skirted the Scottish western littoral, the strongest winds being felt in the south-west and west of England. | The centre of this system, after passing over Ireland and Scotland, kept to the westward of the Norwegian coast, and therefore nothing is definitely known of its history subsequent to the 10th. | A small subsidiary depression passed over the north of England at the same time that the centre of the primary disturbance lay over the north of Scotland. The latter passed away to the northward of Scotland during the night of the 21st, but it was followed by a number of other low-pressure areas, the centres of which, however, as a rule, passed outside our north-western coasts. Under their influence the barometer remained low, and the weather very unsettled. |

## TABLE OF CYCLONIC SYSTEMS.—OCTOBER 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XL.<br>October 24-25. | No. XLI.<br>October 25-27. |
|---|---|---|
| **Form** | Circular | Circular |
| **Size** | Small | Large |
| **Depth** | Moderate | Moderate |
| **Where first Observed** | Over south-western England | West of Ireland |
| **Direction of Motion** | At first easterly, then northerly | South-easterly, changing to north-easterly |
| **Rate of Motion** | Rapid | Moderate |
| **Regions passed over by Steepest Gradients** | Southern England, the Channel, and northern France. | The Bay of Biscay, northern France, and the Channel. |
| **Termination** | After travelling northward to the Skagerrack it disappeared over the North Sea. | Disappeared over the ocean to the westward of Scandinavia. |
| **Time under Observation** | About 24 hours | About 36 hours |
| **Accompanying Winds** | Moderate from South-west to West in the north; but blowing a strong gale from between South and West over southern England and the Channel coasts. A strong Southerly gale also reported from southern Scandinavia. | Light and variable in the north; but veering from South-west to West and North-west, on our south and west coasts; strong to a hard gale. |
| „ **Weather** | Generally overcast or cloudy, with rain; clearing up in the rear of the depression. | Dull and unsettled, except in the north of Scotland, with rain in the south and south-east of England. |
| „ **Rainfall** | Rain fell heavily at all the southern stations, and to a less extent elsewhere. | Heavy at some stations, moderate at others; at a few no rain fell. |
| **REMARKS** | This depression was subsidiary to a much larger one—part of the series already mentioned—passing outside the Hebrides in a northerly direction, but at too great a distance to allow of any details as to its size, &c. being given. The smaller system seems to have developed in intensity; and after reaching the North Sea changed its course more to the northward towards Scandinavia, causing strong Southerly gales to blow on the Danish coast. At 8 a.m. on the 25th its centre was not far from the Naze, from whence it passed away to the westward of the Norwegian coast. | This disturbance reached our coasts to the northward of the track followed by the preceding one, but after travelling towards the south-east of England it, like its predecessor, changed its course to the north-east, and followed a very similar path. Unlike it, however, it did not become deeper *en route*, and over the greater part of the United Kingdom gradients were by no means steep. |

## TABLE OF CYCLONIC SYSTEMS.—OCTOBER—NOVEMBER 1878.

| No. XLII.<br>October 28—November 1. | No. XLIII.<br>November 8-9. | No. XLIV.<br>November 10-11. |
|---|---|---|
| Elliptical | Oval | Nearly circular. |
| Very large | Large | Large. |
| Moderate | Moderate | Deep. |
| Near the Shetlands | Over the north of England | Over the north of Scotland. |
| Easterly, but for a time almost stationary | At first east-south-easterly, then north-easterly | At first easterly, then northerly. |
| Very slow | Slow | Slow. |
| The United Kingdom | The United Kingdom, the Channel, and northern France. | The British Isles, northern France, the Netherlands, and Scandinavia. |
| Disappeared near the Gulf of Finland | After travelling to Germany it passed away up the Baltic. | Disappeared over the ocean to the westward of Norway. |
| Four days | About 48 hours | About 36 hours. |
| Strong North-westerly and Northerly winds and gales. | Westerly in the south, and Easterly in the north, becoming generally Northerly; strong to a hard gale. | South-westerly winds, veering to West and North; strong to a hard gale. |
| Cold, with frequent showers of snow, hail, and cold rain. | Dull and wet, with snow in places; becoming very fine in the rear of the depression. | At first warmer, but unsettled; with heavy rain over central and southern England. Afterwards improving for a short time. |
| Rain or snow fell at most stations, but as a rule the amounts were not large. | Rain fell pretty generally, and in the south-east of England the fall was heavy. | Rain or snow fell all over the kingdom, heavily in places. |
| The centre of this system kept near the south-west of Scandinavia for a considerable time, during which a small subsidiary disturbance appears to have skirted its western side, causing a slight fall of the barometer at our northern and eastern stations during the night of the 29th or morning of the 30th. The gradients accompanying the system appear to have been steep only on its western side. | This disturbance approached us from the north-westward, end continued to move in nearly the same direction till it reached the Continent. It then shifted its course to the north-east and moved up the Baltic, becoming apparently partially filled up *en route*. At 8 a.m. on the 10th its centre was probably near the Gulf of Finland. | The centre of this rather complicated system reached our northern coasts from the Atlantic during the night of the 9th. It was accompanied by some subsidiary disturbances, which prevented the barometer from rising till towards the close of the 10th, by which time the centre of the main disturbance had reached the North Sea. After gaining southern Scandinavia it altered its path to the northward and quickly disappeared. |

## TABLE OF CYCLONIC SYSTEMS.—NOVEMBER–DECEMBER 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XLV.<br>**November 12-17.** | No. XLVI.<br>**December 10-12.** |
|---|---|---|
| **Form** | Circular; but varying somewhat | Probably circular |
| **Size** | Large | Large |
| **Depth** | At first moderate, then deep | Moderate |
| **Where first observed** | At the mouth of the Channel | Over the Baltic provinces of Russia |
| **Direction of Motion** | Easterly, changing to northerly | Northerly |
| **Rate of Motion** | Very slow | Slow |
| **Regions passed over by steepest Gradients** | The British Isles, North Sea, and adjoining portions of the Continent. | Germany, Sweden, and the Baltic |
| **Termination** | Became nearly filled up over the North Sea and finally moved away to the southward. | Disappeared over Finland |
| **Time under Observation** | Six days | About 36 hours |
| **Accompanying Winds** | Northerly over the British Isles; Westerly to Southerly over the Netherlands and Denmark; Easterly in Scandinavia; varying in force from a moderate or fresh wind to a hard gale. | Only moderate winds were experienced in Great Britain, but on the Baltic coasts a strong Northerly gale was felt. |
| **" Weather** | Very unsettled throughout, with a good deal of rain or snow, and at a few places thunderstorms. | Fine on the whole, but snow showers occurred at many of our stations, as well as in the Baltic. |
| **" Rainfall** | Rain or snow fell at most of our stations, the falls being very heavy at many of them. | Generally slight |
| **REMARKS** | This low-pressure system exhibited some unusual features. It first appeared on our south-western coasts as a not very important subsidiary depression; 24 hours later its centre lay over the eastern half of the Channel, and formed one of five distinct barometrical minima existing in a belt of low pressure which stretched from the north of Spain to the west of Norway. For several hours the system appeared to be filling up, but towards the close of the 14th it began to re-develop in intensity, and, without moving far, quickly grew into a deep depression, with steep gradients on all its sides. On the 16th it again began to fill up, and after remaining stationary throughout the 17th, it apparently became dispersed over France. | This system did not extend to our shores, and only a small portion of it entered the eastern limits of the area embraced by our observations. Its centre was not far from Memel on the morning of the 11th, after which it travelled slowly away to the northward. |

## TABLE OF CYCLONIC SYSTEMS.—DECEMBER 1878.

| No. XLVII.<br>December 13-14. | No. XLVIII.<br>December 18-20. | No. XLIX.<br>December 29-31. |
|---|---|---|
| Circular | Circular | Doubtful. |
| Moderate | Large | Very large. |
| Shallow | Moderate | Deep. |
| To the south of Ireland | Over Scotland | Off our north-west coasts. |
| South-easterly | Easterly | Probably north-easterly. |
| Very slow | Very slow | Moderate. |
| The mouth of the Channel and adjoining coasts | Great Britain, the Channel and North Sea, and adjacent coasts. | The British Isles, the North Sea, and Scandinavia. |
| Became filled up over France | Travelled away to the north of Russia | Passed away over the ocean to the northward of Scotland. |
| Rather more than 24 hours | About two days | Nearly three days. |
| South-easterly to Easterly winds over the greater part of England and Ireland; strong at the mouth of the Channel, moderate elsewhere. | Westerly over England, Easterly in the north of Scotland; becoming Northerly over Scotland and Ireland. At first fresh or strong in force, but subsequently moderating. | South-westerly to Westerly winds; fresh to a strong gale. |
| Cold and foggy, becoming cloudy, with snow at a good many stations. | Unsettled, with showers of snow or sleet at many stations. Thunder and lightning in the north-west and north. | Warm, dull, and rainy. |
| Heavy in the south-west, slight elsewhere | Rain or snow fell at most stations, but not heavily as a rule. | Very general; and in the north-west rather heavy. |
| This was a small system of only local importance, the barometer being but slightly affected at the northern and eastern stations. | The centre of this depression passed very close to Glasgow during the morning of the 18th, and did not leave the eastern coast of Scotland till the close of the day. On the morning of the 20th it was observed over the Baltic, after which it passed beyond the limits of the area embraced by this report. | This was a series of depressions rather than a single one, but as their centres lay outside our coasts it is not easy to distinguish definitely between them. On Plate LXXIII. there are indications of three distinct centres (probably subsidiary ones) having skirted our coasts during the three days, and the last of these, approaching more closely than its predecessors, lay near our extreme northern coasts at 6 p.m. of the 31st, at which time strong Westerly winds were general over nearly the whole kingdom. |

# TABLES OF GALES.

## No. 10. (Cyclonic System, No. XXXVII.)

| Stations. | Velocity 30-40 Miles per Hour. | | Velocity Exceeding 40 Miles per Hour. | | | | Velocity Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | Maximum Velocity. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| Oct. 7-8, 1878. | | | | | | | | | | | | | |
| Sandwick | 7 a.m. (8th). | E.S.E. | — | — | — | — | 10 p.m. (8th). | S.E. by S. | 15 | 11 a.m., Noon, & 3 p.m. (8th). | S.E. | 33 | — |
| Stonyhurst. | 9 a.m. (8th). | S.S.E. | — | — | — | — | Noon (8th). | S. | 3 | 9 a.m. (8th). | S.S.E. | 34 | — |
| Holyhead | 6 a.m. (7th). | S. by E. | 8 p.m. (7th). | S.E. by S. | 55 | 12 | 6 p.m. (8th). | S.W. by S. | 36 | Midt. (7th). | S.S.E. | 71 | — |
| Valencia | 11 a.m. (8th). | W. by S. | — | — | — | — | 1 p.m. (8th). | W. by S. | 2 | 11 a.m. & Noon (8th). | W. by S. | 30 | — |
| Falmouth. | 8 a.m. (7th). | S. by W. | 1 p.m. (7th). | S.S.E | 52 | 9 | Midt. (7th). | S.S.W. | 16 | 7 p.m. (7th). | S. | 61 | 32 miles were also recorded at 1 a.m. 8th. |
| | 10 a.m. (8th). | W.S.W. | — | — | — | — | 3 p.m. (8th). | W. by S. | 5 | Noon (8th). | W.S.W. | 33 | |
| Yarmouth | 9 p.m. (7th). | S.S.E. | — | — | — | — | 4 a.m. (8th). | S. by E. | 7 | 3 a.m. (8th). | S.S.E. | 36 | — |

## No. 11. (Cyclonic System, No. XXXVIII.)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oct. 9-11, 1878. | | | | | | | | | | | | | |
| Sandwick. | 5 p.m. (9th). | S.S.E. | — | — | — | — | 7 p.m. (9th). | S.S.E. | 2 | 5 & 6 p.m. (9th). | S.S.E. | 31 | — |
| Alnwick Castle. | 4 p.m. (10th). | S.W. by S. | 5 p.m. (10th). | S.W. | 42 | 5 | 10 a.m. (11th). | W. | 18 | 8 p.m. (10th.) | S.W.byW. | 44 | — |
| | 11 a.m. (11th). | W. | — | — | — | — | 4 p.m. (11th). | W. by N. | 5 | 11 a.m. (11th), | W. | 35 | — |
| Stonyhurst. | 11 a.m. (9th). | S.S.E. | — | — | — | — | 4 p.m. (9th). | S. | 5 | 2 p.m. (9th). | S.E. by S. | 39 | — |
| | 3 a.m. (10th). | S.S.E. | — | — | — | — | 6 a.m. (10th). | S. by E. | 3 | 3 a.m. (10th). | S.S.E. | 37 | — |
| | 7 a.m. (10th). | S.S.E. | — | — | — | — | 11 a.m. (10th). | S.S.W. | 4 | 9 a.m. (10th). | S.S.E. | 39 | — |
| Holyhead. | 3 a.m. (9th). | S.S.W. | 6 a.m. (9th). | S. | 46 | 6 | 1 p.m. (9th). | S. by W. | 10 | 11 a.m. (9th). | S. by E. | 50 | — |
| | 2 p.m. (9th). | S.byW. | 5 p.m. (9th). | S. by W. | 49 | 14 | 1 p.m. (11th). | W.N.W. | 47 | 5 a.m. (10th). | S. | 52 | — |
| | | | 9 p.m. (10th). | W. | 40 | 1 | | | | | | | |
| Valencia. | Midt. (8th). | S.S.E. | 1 a.m. (9th). | S. | 44 | 4 | 6 p.m. (10th). | W.N.W. | 42 | 4 p.m. (9th).<br>8 p.m. (9th). | S.by W.<br>S.S.W. | 52 | — |
| | | | 7 a.m. (9th). | S. by W. | 40 | 1 | | | | | | | |
| | | | 10 a.m. (9th). | S. by E. | 48 | 11 | | | | | | | |
| Falmouth. | 6 a.m. (9th). | S.S.W. | 9 a.m. (9th). | S. by W. | 40 | 1 | 6 p.m. (10th). | W. | 36 | 11 a.m. (10th). | W. by N. | 42 | — |
| | | | Midt. (9th). | S.W. by S. | 41 | 1 | | | | | | | |
| | | | 11 a.m. (10th). | W. by N. | 41 | 2 | | | | | | | |
| Yarmouth. | 3 p.m. (9th). | S. | — | — | — | — | 8 p.m. (9th). | S. | 5 | 6 p.m. (9th). | S. | 35 | 30 miles were also recorded at a few hours on the 10th. |

## No. 12. (Cyclonic System, No. XLII.)

| Stations. | Velocity 30-40 Miles per Hour. | | Velocity Exceeding 40 Miles per Hour. | | | | Velocity Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | Maximum Velocity. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| Oct. 28-31, 1878. | | | | | | | | | | | | | |
| Sandwick. | 2 p.m. (28th). | N. by E. | 3 p.m. (28th).<br>6 p.m. (28th). | N.<br>N. by W. | 40<br>42 | 1<br>3 | 11 p.m. (28th). | N. by W. | 9 | 6&8p.m. (28th). | N. by W. | 42 | — |
| | 3 a.m. (29th). | N.W.byN. | 4 p.m. (29th). | N.W.b.W. | 47 | 3 | 9 p.m. (29th). | N. by W. | 18 | 4&5p.m. (29th). | N.W.b.W. | 50 | — |
| | — | — | 4 a.m. (30th). | N.N.E. | 48 | 18 | 1 a.m. (31st). | N. by W. | 21 | 7 a.m. (30th). | N. by W. | 58 | 32 miles were registered at 1 a.m. 30th. Velocity was also 38 miles at Noon, 31st. |
| | 6 a.m. (31st). | N.N.W. | — | — | — | — | 9 a.m. (31st). | N. by E. | 3 | 6 a.m. (31st). | N.N.W. | 36 | |
| | 2 p.m. (31st). | N. | — | — | — | — | 6 p.m. (31st). | N.E. | 4 | 2 p.m. (31st). | N. | 33 | |
| | 7 p.m. (31st). | N. | — | — | — | — | 10 p.m. (31st). | N. | 3 | 7 p.m. (31st). | N. | 33 | — |
| Alnwick Castle. | 9 p.m. (28th). | N.W. | Midt. (28th). | N.W.b N. | 40 | 1 | 2 a.m. (29th). | N.N.W. | 5 | Midt. (28th). | N.W.byN. | 40 | — |
| Seaham - | 1 a.m. (29th). | N. by W. | — | — | — | — | 3 a.m. (29th). | N.N.W. | 2 | 1 a.m. (29th). | N. by W. | 38 | — |
| Holyhead. | 4 a.m. (28th). | W. | 8 a.m. (28th). | W.N.W. | 51 | 22 | 2 p.m. (29th). | N. by E. | 34 | 4 p.m. (28th). | N.W. | 62 | — |
| | 4 p.m. (29th). | N.byW. | 5 p.m. (29th).<br>7 p.m. (29th). | N. by E.<br>N.N.W. | 40<br>48 | 1<br>38 | Noon (31st). | N. by E. | 44 | 10 a.m. (30th). | N.W.byN. | 62 | — |
| Falmouth. | 11 p.m. (28th). | N.W.byN. | — | — | — | — | 5 a.m. (29th). | N.W.byN. | 6 | Midt. (28th) & 3 a.m. (29th). | N.W.b.N. | 36 | — |
| | 8 p.m. (29th). | N.N.W. | — | — | — | — | 4 a.m. (30th). | N.W.byN. | 8 | Midt. (29th). | N.N.W. | 35 | — |
| | 11 a.m. (30th). | W.N.W. | — | — | — | — | 2 p.m. (30th). | N.W.b.W. | 3 | 11 a.m. (30th). | W.N.W. | 33 | 30 miles were also recorded at 3 & 4 p.m. 30th. |
| Yarmouth | 4 a.m. (29th). | W.N.W. | — | — | — | — | 8 a.m. (29th). | N.W.b.W. | 4 | 4&5a.m. (29th). | W.N.W. | 31 | |

## No. 13. (Cyclonic System, No. XLIII.)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov. 8-9, 1878. | | | | | | | | | | | | | |
| Sandwick. | 8 a.m. (8th). | N.W. | 9 a.m. (8th). | N.W. | 42 | 4 | 1 p.m. (8th). | N.W.b.W. | 5 | Noon (8th). | W.N.W. | 44 | — |
| | 6 p.m. (8th). | N. by E. | — | — | — | — | 8 p.m. (8th). | N. by E. | 2 | 6 p.m. (8th). | N. by E. | 35 | Also 38 miles were recorded at 4 p.m. 8th. |
| Holyhead | 8 a.m. (8th). | N.W.b.W. | 11 a.m. (8th)<br>9 p.m. (8th). | N. by W.<br>N.N.W. | 52<br>44 | 8<br>7 | 6 a.m. (9th). | N. by W. | 22 | Noon (8th). | N. by W. | 62 | — |
| Valencia | 1 a.m. (8th). | W. | 3 a.m. (8th). | N.W.b.W. | 42 | 5 | 1 p.m. (8th). | N. by W. | 12 | 5 a.m. (8th). | W.N.W. | 45 | — |
| Falmouth | 7 a.m. (8th). | W.by N. | 9 a.m. (8th).<br>Noon (8th).<br>2 p.m. (8th). | W. by N.<br>N.W.b.W.<br>N.W. | 43<br>40<br>41 | 1<br>1<br>1 | 10 p.m. (8th). | N.W. | 15 | 9 a.m. (8th). | W. by N. | 43 | — |
| Yarmouth | 9 p.m. (8th). | N.N.W. | — | — | — | — | Midt. (8th). | N.N.W. | 3 | 10 p.m. (8th). | N.N.W. | 36 | — |

## No. 14. (CYCLONIC SYSTEM, No. XLIV.)

| Stations. | VELOCITY 30-40 Miles per Hour. | | VELOCITY Exceeding 40 Miles per Hour. | | | | VELOCITY Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | MAXIMUM VELOCITY. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| Nov. 9-12, 1878. | | | | | | | | | | | | | |
| Sandwick | 3 p.m. (10th). | N.N.E. | 5 p.m. (10th).<br>1 a.m. (11th).<br>5 a.m. (11th).<br>5 p.m. (11th).<br>Midt. (11th). | N.N.E.<br>N.N.W.<br>N.W.byN.<br>N. by W.<br>N.W.byN. | 42<br>42<br>48<br>44<br>50 | 5<br>2<br>5<br>2<br>22 | 11 p.m. (12th). | N.E.by N. | 56 | 2 p.m. (12th). | N. by W. | 63 | — |
| Aberdeen | 9 p.m. (10th). | N.W. | — | — | — | — | 3 p.m. (11th). | W.N.W. | 18 | 11 p.m. (10th).<br>10 a.m. (11th). | N.W.byN.<br>N.W.b.W. | 39 | — |
| Alnwick Castle. | 1 a.m. (11th). | W.N.W. | — | — | — | — | 5 a.m. (11th). | N.W.b.W. | 4 | 4 a.m. (11th). | N.W.b.W. | 34 | — |
| Seaham | 1 a.m. (10th). | S. | — | — | — | — | 4 a.m. (10th). | S.W.by S. | 3 | 2 a.m. (10th). | S. | 37 | — |
| Stonyhurst. | 10 p.m. (9th). | S.S.E. | — | — | — | — | 3 a.m. (10th). | S.S.W. | 5 | 1 a.m. (10th). | S.S.E. | 38 | — |
| Holyhead. | 6 p.m. (9th). | S.S.W. | 9 p.m. (9th). | S.S.W. | 48 | 5 | 3 a.m. (10th). | W. | 9 | 10 p.m. (9th). | S.S.W. | 51 | — |
| | 6 p.m. (10th.) | W.N.W. | 8 p.m. (10th). | N.W. | 54 | 13 | 10 a.m. (11th). | W.N.W. | 16 | 3 a.m. (11th). | N.W. | 61 | — |
| | 1 p.m. (11th). | S.W. | 4 p.m. (11th).<br>7 p.m. (11th).<br>9 p.m. (11th). | N. by E.<br>W.N.W.<br>N.W.b.W. | 49<br>40<br>44 | 1<br>1<br>4 | 3 a.m. (12th). | N.W.byN. | 14 | 4 p.m. (11th).<br>Midt. (11th). | N. by E.<br>N.W.b.W. | 49 | — |
| Valencia. | Noon (9th). | S.S.W. | 1 p.m. (9th). | S.S.W. | 45 | 13 | 2 a.m. (10th). | W.N.W. | 14 | 7 p.m. (9th). | S.W. | 54 | — |
| | Noon (10th). | W. | — | — | — | — | Midt. (10th). | N. by W. | 12 | 2 p.m. (10th). | N.W. | 35 | — |
| | 4 p.m. (11th). | N.W. | — | — | — | — | 8 p.m. (11th). | N.W. | 4 | 7 p.m. (11th). | N.N.W. | 34 | 30 miles were also recorded at a few other hours on 11th. |
| Falmouth. | 10 p.m. (9th). | S.W. | 1 a.m. (10th). | S.W. | 46 | 11 | 4 p.m. (10th). | W. | 18 | 9 a.m. (10th). | S.W. | 50 | — |
| | 6 p.m. (10th). | W. | — | — | — | — | 10 p.m. (10th). | N.W.b.W | 4 | 6 p.m. (10th).<br>9 p.m. (10th). | W.<br>W.N.W. | 33 | — |
| | 4 a.m. (11th). | N.W. | — | — | — | — | 6 a.m. (11th). | N.W. | 2 | 4 a.m. (11th). | N.W. | 37 | — |
| | 7 a.m. (11th). | N.W. | — | — | — | — | 9 a.m. (11th). | N.W.b.W. | 2 | 7 a.m. (11th). | N.W. | 35 | — |
| Kew | 4 a.m. (10th). | S.S.W. | — | — | — | — | 10 a.m. (10th). | S.W.byS. | 6 | 6 a.m. (10th). | S.S.W. | 37 | — |
| | 11 a.m. (10th). | S.W.byS. | — | — | — | — | 3 p.m. (10th). | S.W.byW. | 4 | 1 p.m. (10th). | S.W. by S. | 38 | — |
| Yarmouth | 5 a.m. (10th). | S.S.W. | — | — | — | — | 8 a.m. (10th). | S.S.W. | 3 | 7 a.m. (10th). | S.S.W. | 36 | — |

## No. 15. (Cyclonic System, No. XLV.)

| Stations. | Velocity 30-40 Miles per Hour. | | Velocity Exceeding 40 Miles per Hour. | | | | Velocity Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | Maximum Velocity. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| Nov. 12-17, 1878. | | | | | | | | | | | | | |
| Sandwick | 11 a.m. (15th). | N. | Midt. (15th). | N. | 42 | 3 | 5a .m. (16th). | N.E. | 18 | 1 a.m. (16th).<br>2 a.m. (16th). | N.<br>N.N.E. | 43 | — |
| Aberdeen | 6 a.m. (12th). | N.W. | — | — | — | — | 10 a.m. (12th). | N.W.b.W. | 4 | 7&8a.m. (12th). | N.W.b.W. | 34 | — |
| Alnwick Castle. | 5 a.m. (12th). | N.N.W. | — | — | — | — | 1 p.m. (12th). | N.W. | 8 | 9 a.m. (12th). | N.W.byN. | 39 | — |
| Seaham | 4 a.m. (15th). | N.E. by E. | — | — | — | — | 6 a.m. (15th). | N.E. | 2 | 5 a.m. (15th). | N.E. | 34 | — |
| | 5 p.m. (15th). | N. | 7 p.m. (15th).<br>10 p.m. (15th). | N.<br>N. | 41<br>47 | 1<br>2 | Midt. (15th). | N. by W. | 7 | 11 p.m. (15th). | N. | 47 | — |
| | 8 p.m. (16th). | N. | — | — | — | — | 11 p.m. (16th). | N. | 3 | 8 p.m. (16th). | N. | 37 | — |
| | 6 a.m. (17th). | N. | — | — | — | — | 8 a.m. (17th). | N. | 2 | 7 a.m. (17th). | N. | 33 | — |
| Holyhead. | 11 a.m. (12th). | NW.b.W. | 2 p.m. (12th).<br>3 p.m. (13th). | N.W.byN.<br>N.N.E. | 46<br>40 | 20<br>1 | 10 p.m. (13th). | N.E. by N. | 35 | 7 p.m. (12th).<br>8 p.m. (12th).<br>10 p.m. (12th).<br>11 p.m. (12th).<br>1 a.m. (13th). | N. by W.<br>N.<br>N. by W.<br>N.N.W.<br>N.N.W. | 50 | — |
| | 5 p.m. (14th). | N. | 10 p.m. (14th).<br>6 p.m. (16th).<br>4 p.m. (17th).<br>9 p.m. (17th). | N. by E.<br>N. by E.<br>N.<br>N. by E. | 53<br>43<br>42<br>41 | 43<br>21<br>4<br>3 | 11 a.m. (18th). | N.E. by N. | 90 | 7&8a.m. (15th). | N. | 63 | — |
| Valencia | 5 p.m. (12th). | N. | — | — | — | — | 8 p.m. (12th). | N.N.E. | 3 | 6 p.m. (12th). | N. by. W. | 36 | 30 miles were also recorded at a few hours on 16th and 17th. |
| Falmouth. | — | — | 4 p.m. (12th). | N.N.E. | 43 | 1 | 8 p.m. (12th). | N.N.E. | 4 | 4 p.m. (12th). | N.N.E. | 43 | |
| | 2 p.m. (13th). | N.N.W. | — | — | — | — | 6 p.m. (13th). | N.N.W. | 4 | 2 & 3 p.m. (13th). | N.N.W. | 34 | — |
| | 7 a.m. (15th). | N.N.W. | — | — | — | — | 2 p.m. (15th). | N. | 7 | 9 a.m. (15th). | N.W. | 37 | — |
| | 4 p.m. (15th). | N.N.W. | — | — | — | — | 1 a.m. (16th). | N.W. byN. | 9 | 6 p.m. (15th). | N.N.W. | 35 | 30 miles were registered at a few hours on 16th. |
| Yarmouth. | 6 a.m. (14th). | N.E. by N. | 9 a.m. (14th). | N.E. by E. | 44 | 1 | 11 a.m. (14th). | N.E. by E. | 5 | 9 a.m. (14th). | N.E.byE. | 44 | |
| | Noon (14th). | E.N.E. | — | — | — | — | 2 p.m. (14th). | N.E. by E. | 2 | Noon (14th). | E.N.E. | 38 | — |

## No. 16. (Cyclonic System, No. XLVII.)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dec. 13-14, 1878. | | | | | | | | | | | | | |
| Falmouth. | 11 a.m. (13th). | S.S.E. | 5 p.m. (13th).<br>7 p.m. (13th). | S.E.<br>S.E. | 43<br>46 | 1<br>9 | 5 a.m. (14th). | E.N.E. | 18 | Midt. (13th). | E.S.E. | 52 | |
| | 6 a.m. (14th). | E. by N. | 7 a.m. (14th). | E.N.E. | 46 | 2 | Noon (14th). | N.N.E. | 6 | 7 a.m. (14th). | E.N.E. | 50 | — |

## No. 17. (Cyclonic System, No. XLIX.)

| Stations. | Velocity 30-40 Miles per Hour. | | Velocity Exceeding 40 Miles per Hour. | | | | Velocity Fell below 30 Miles per Hour. | | Total No. of Hours the Vel. above 30 Mls. | Maximum Velocity. | | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Commenced. | Direction of Wind. | Commenced. | Direction of Wind. | Mean Vel. | Duration in Hours. | Ended. | Direction of Wind. | | Hour. | Direction of Wind. | Velocity. | |
| Dec. 29, 1878, to Jan. 2, 1879. | | | | | | | | | | | | | |
| Sandwick. | 7 p.m. (31st). | N. by E. | 10 p.m. (31st).<br>5 p.m. (1st).<br>8 a.m. (2nd). | N.N.W<br>N.W.b.W.<br>N.W.b.W. | 44<br>42<br>41 | 17<br>1<br>1 | 1 p.m. (2nd). | N.W. | 42 | 7 a.m. (1st). | N.W.b.W. | 51 | — |
| | 2 p.m. (2nd). | N.W. | — | — | — | — | 5 p.m. (2nd). | N.W. | 3 | 4 p.m. (2nd). | N.W.b.W. | 34 | — |
| Aberdeen | 4 a.m. (1st). | N.W.b.W. | — | — | — | — | 6 a.m. (1st). | N.W.b.W. | 2 | 4 a.m. (1st). | N.W.b.W. | 36 | — |
| Glasgow | 2 p.m. (31st). | S.S.W. | 5 p.m. (31st). | S.W. | 41 | 1 | 10 p.m. (31st). | W. | 8 | 5 p.m. (31st). | S.W. | 41 | — |
| Alnwick Castle. | 9 a.m. (30th). | W. by S. | 10 a.m. (30th).<br>5 p.m. (30th). | W.S.W.<br>S.W. | 42<br>43 | 5<br>3 | 9 p.m. (30th). | W. by S. | 12 | 10 a.m. (30th).<br>5 p.m. (30th).<br>6 p.m. (30th). | W.S.W.<br>S.W.<br>S.W. by S. | 45 | — |
| | 7 a.m. (31st). | S.W. | 1 p.m. (31st). | S.W.byW. | 43 | 1 | 4 p.m. (31st). | S.W. by S. | 9 | 1 p.m. (31st). | S.W.byW. | 43 | — |
| | 5 p.m. (31st). | S.W. by S. | 6 p.m. (31st). | S.W. | 51 | 8 | 4 a.m. (1st). | W. by N. | 11 | 9 p.m. (31st). | W.S.W. | 62 | — |
| Seaham | 7 p.m. (31st). | S.W. | — | — | — | — | 1 a.m. (1st). | W.N.W. | 6 | 8 p.m. (31st). | S.W.b.W. | 38 | — |
| Stonyhurst. | 4 p.m. (31st). | S.W. by S. | — | — | — | — | 11 p.m. (31st). | S.W.b.W. | 7 | 10 p.m. (31st). | S.W. by S. | 39 | 33 miles were recorded at Midnight 31st. |
| Holyhead. | 10 p.m. (29th). | S.E. by S. | 1 a.m. (30th). | S.S.E. | 42 | 2 | 5 a.m. (30th). | S.W.byS. | 7 | 1 a.m. (30th). | S.S.E. | 43 | |
| | Midt. (30th). | S.S.W. | 4 a.m. (31st).<br>10 a.m. (31st). | S.W. by S.<br>S.W. by S. | 42<br>42 | 2<br>6 | Midt. (31st). | W. | 24 | 4 a.m. (31st). | S.W.by S. | 43 | — |
| Armagh | 11 a.m. (31st). | S.W. by S. | — | — | — | — | 5 p.m. (31st). | S.W. | 6 | 11 a.m. & Noon (31st). | S.W.by S. | 34 | — |
| Valencia | 6 p.m. (29th). | S.E. | 7 p.m. (29th).<br>7 a.m. (30th). | S.E. by S.<br>S. by W. | 42<br>46 | 10<br>37 | 8 p.m. (31st). | W. by S. | 50 | 8 p.m. (30th).<br>Midt. (30th). | S. by W.<br>S.W. | 56 | — |
| Falmouth. | Midt. (29th). | S.W. | 2 a.m. (30th). | S.W. | 40 | 3 | 7 a.m. (30th). | W.S.W. | 7 | 3 a.m. (30th). | S.W. | 41 | — |
| | Noon (30th). | S.W.byS. | — | — | — | — | 3 p.m. (30th). | S.W. | 3 | 1 p.m. (30th). | S.W. by S. | 32 | — |
| | 4 p.m. (30th). | S.W. | 3 a.m. (31st).<br>8 a.m. (31st).<br>Noon (31st).<br>7 p.m. (31st). | S.W. b.W.<br>S.W. b.W.<br>S.W.<br>W.S.W. | 41<br>41<br>43<br>43 | 4<br>1<br>6<br>3 | 2 a.m. (1st). | W. | 34 | Noon (31st).<br>4 p.m. (31st). | S.W.<br>W.S.W. | 45 | — |
| Kew | 11 a.m. (31st). | S.W. | — | — | — | — | 4 p.m. (31st). | S.W. | 5 | 11 a.m. (31st). | S.W. | 33 | — |
| Yarmouth | 9 p.m. (31st). | W.S.W. | 1 a.m. (1st). | W.S.W. | 40 | 1 | 4 a.m. (1st). | W. | 7 | 1 a.m. (1st). | W.S.W. | 40 | — |

## TABLE OF ANTICYCLONIC SYSTEMS.—OCTOBER 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XVIII.<br>October 1-6. | No. XIX.<br>October 11-16. |
|---|---|---|
| **Form** | Irregular | Elliptical. |
| **Size** | Large | Large. |
| **Height** | Small. Maximum readings 30·35 inches on 2nd | Moderate. Maximum readings 30·4 inches, 13th, 14th, 15th, and 16th. |
| **Where first observed** | Over the Bay of Biscay | Over the Peninsula. |
| **Direction of Motion** | Easterly | North-easterly. |
| **Rate of Motion** | Very slow | Slow. |
| **Regions passed over** | The British Isles, France, and central Europe | France, south-eastern England, the Netherlands, and Scandinavia. |
| **Termination** | Became dispersed over Russia | Passed away to north-eastern Russia. |
| **Accompanying Wind** | Light Northerly or variable airs, becoming Southerly later on. | Westerly, backing to Southerly winds moderate to fresh; followed by light Easterly airs and calms. |
| „ **Weather** | As a rule very fine; but with more cloud in the west than elsewhere. Temperature unusually high for the season. | Warm and dull, but very dry. |
| **REMARKS** | The centre of this system lay over the British Isles on the 2nd, after which it slowly passed away to the eastward, and was reported over Russia, beyond the limits of our area, on the 7th. Simultaneously with its departure from our shores a series of low-pressure areas began to arrive and skirt our western coasts. | This system was first observed over the Peninsula just as an area of low pressure was passing away to the westward of Scotland. The centre of the anticyclone only touched our south-eastern districts, and passed on to the Baltic, and thence out of our area across Russia. It was not finally lost sight of till the 18th, although it was then beyond the region embraced by these remarks; and till that date it continued to stretch an arm of high readings westward to the Baltic and Sweden. |

## TABLE OF ANTICYCLONIC SYSTEMS.—OCTOBER—NOVEMBER 1878.

| NATURE OF CHARACTERISTICS OBSERVED. | No. XX.<br>October 30–November 3. | No. XXI.<br>November 9-10. |
|---|---|---|
| **Form** | Unknown | Irregular |
| **Size** | Large | Small |
| **Height** | Small. Maximum readings 30·45 inches on 2nd | Moderate. Maximum readings 30·4 inches on 9th |
| **Where first Observed** | Off our western coasts | Over the Bay of Biscay |
| **Direction of Motion** | Doubtful; probably at first easterly, and then returning to the westward. | Easterly |
| **Rate of Motion** | Slow | Moderate |
| **Regions passed over** | The British Isles, and the ocean to the westward | France |
| **Termination** | Disappeared to the westward of Ireland | Disappeared over Turkey |
| **Accompanying Wind** | Northerly; moderate or fresh in force | Moderate Westerly winds, backing to South-west, and freshening. |
| „ **Weather** | Rather variable, but as a rule dull, with showers of rain, hail, or snow; cold throughout. | At first fine and cold; but becoming warmer and unsettled, with heavy rain in places. |
| **REMARKS** | The whole of this system never came into view, and therefore precise details as to some of its characteristics cannot be given. Its centre was probably very near the Irish coast on the 3rd, after which it retreated again over the ocean, where it was finally lost sight of. | This small system did not extend to the British Isles, and was confined to southern Europe. It followed upon, and was succeeded by, areas of low pressure, which crossed Great Britain, and caused rather steep gradients to prevail. The anticyclone passed out of our area on the 10th, but the continental reports showed it to be over Turkey on the 11th. |

## TABLE OF ANTICYCLONIC SYSTEMS.—NOVEMBER—DECEMBER 1878.

| No. XXII.<br>November 18-23. | No. XXIII.<br>December 2-6. | No. XXIV.<br>December 23-25. |
|---|---|---|
| Elongated | Irregular | Elongated. |
| Large | Large | Small. |
| Small. Maximum readings 30·5 inches on 19th and 20th. | Moderate. Maximum readings 30·4 inches on 3rd and 4th. | Moderate. Maximum readings 30·4 inches on 24th. |
| Over Ireland | To the west and north-west of Great Britain | On the west coast of Ireland. |
| Easterly | At first easterly, then returning to the south-west | Easterly. |
| Very slow | Slow | Moderate. |
| The British Isles, the Netherlands, and Germany | The British Isles and Scandinavia | The British Isles, Belgium, and Germany. |
| Became dispersed | Passed away to the south-west of Ireland | Disappeared over eastern Europe. |
| Light winds, chiefly Easterly, and calms; but in the north of Scotland Westerly winds prevailed. | Moderate Northerly winds, veering to East, then backing again to North and North-west. | Moderate Northerly winds, veering to East in the south, but backing to West in the north, with calms over central England. |
| Cloudy and foggy, but dry; cold over England, but warmer in Scotland. | Upon the whole unsettled and inclement. Sky generally overcast, with snow and rain showers, but with a few fine intervals. | Very cold and dry, with a good deal of fog. |
| This system began to disperse on the 20th, and by the 23rd had quite disappeared. In the south-east of Europe, however, another system had begun to develop itself, but apparently it was quite distinct from the present one, the dispersion of which was quickly followed by the arrival of a cyclonic disturbance upon our south-western coasts. | With the appearance of this system in the west another high-pressure area was observed in the north-east of Europe. These apparently coalesced and formed a long band of high readings, which embraced at once the British Isles and Scandinavia. The combined system then receded to the south-west, some small disturbances appearing over Scandinavia and the Baltic. | This system was of a very transitory character, and moved briskly out of our area towards eastern Europe, where it was observed on the 26th. It was at once succeeded by an area of low pressure, which was quickly approaching our south-western coasts on the 25th. |

## NOTES to accompany the ANTICYCLONIC TABLES.

October 7th–10th.—During this interval the highest pressures were reported from eastern and south-eastern Europe, over which region the anticyclonic system No. XVIII. had become dispersed.

October 17th–29th.—Comparatively high readings were at first reported from Italy, but only for a short time, and then the barometer became highest over north-eastern Europe, and a band of low readings spread itself over the south-western and southern portion of the Continent. From the 20th onwards the lowest pressures were found in the north-west, and the high pressure shifted southwards; but on the 28th comparatively high readings began to show themselves to the south-west of the British Isles, and these ultimately became developed into anticyclonic system No. XX.

November 4th–8th.—During the first four days of this interval the barometer was highest to the westward of the British Isles, and was relatively low over the whole of continental Europe. On the 8th the highest readings moved to the Peninsula and developed into anticyclonic system No. XXI.

November 11th–17th.—The region of highest pressure varied somewhat during this interval. At first it was found over south-eastern Europe; then it moved in a northerly direction, till on the 15th it covered Finland and the neighbouring regions; after this it receded again to the south-east, and a new area of high pressure appeared in the west, and developing formed anticyclonic system No. XXII.

November 24th–December 1st.—At first pressure was highest over south-eastern Europe and low over the whole of the western portion of the Continent. The barometer gave way, pretty steadily however, in the former region while after a few days it began to rise in the west, with the result that the region of highest pressure became transferred to the west and north of Europe. The high readings in the west then moved southwards, so that, speaking very generally, on the 1st central Europe was covered by a belt of relatively low readings, with higher readings over both the north-eastern and south-western portions of the Continent.

December 7th–22nd.—The general distribution of pressure over Europe underwent a good many changes during this interval. At first the barometer was highest in the south-west and west, but in a day or two it became equally high in the north-east also. It then gave way in the former region, and the highest pressures were for a time reported from Scandinavia and Finland, from whence they shifted again to the westward and south-westward of the British Isles. At no time, however, was pressure high anywhere, and at no time did an area of relatively high pressure hold to any particular region with much persistency. After further changes of a similar character had taken place the barometer rose considerably in the west, and this movement resulted in the development of the anticyclonic system No. XXIV.

December 26th–31st.—During the first five days of this period pressure was highest over eastern Europe, but on the 31st the area of highest readings became extended westward, and spread itself over Italy and the Mediterranean. Areas of low readings were all the while observed in the west and north.

## SECTION III.

### REMARKS FOR OCTOBER 1878.

*(Tables A, to C., October, with Monthly Wind and Weather Charts.)*

*Wind.*—The winds were upon the whole rather variable during the month, and the monthly chart therefore fails to show any marked predominance from one quarter, but, on the contrary, exhibits a good deal of difference in the percentages of wind-direction at stations not far removed from each other. The month opened with calms and light Northerly airs, but early on the 2nd a light Southerly breeze sprang up in the west and quickly became general all over the kingdom. Occasionally it shifted temporarily to the Westward, backing again after a few hours to the Southward. The force continued light or moderate till the 7th, when it rose to a strong gale at several of the south-western and western stations, and freshened on all our coasts. On the 10th Westerly gales blew in the Channel and at many of the western stations, while all over the British Isles fresh Westerly winds prevailed. These, however, moderated on the 11th, and next day calms became general over southern England and the Channel. Another retrograde movement ensued, and again Southerly winds blew all over the kingdom, strongly in the west but with moderate force in the east. On the 14th, however, they backed still more, and, except in the extreme north, became South-easterly and Easterly, and moderated generally. After a few days of light airs and calms the wind freshened a little from the Eastward in the Channel, and from South-east over the northern half of the kingdom; but this was again followed by another spell of light airs, during which the wind gradually veered, till on the 21st it blew with moderate force from South or South-west, and a few hours later rose to a gale from West at the Channel stations. Moderate to strong Westerly winds now blew for some days; but on the 26th they fell light, except at the southern stations, and then veered generally to North, and for a couple of days moderate or fresh Northerly or North-westerly winds prevailed. Gradients then became steep, and till the close of the month strong winds and gales from those quarters were general on all our western coasts, although upon the eastern coasts of England the force did not exceed that of a moderate or fresh breeze.

*Pressure.*—The mean pressure for the month was below the average of the 20 years 1861–80, especially over the northern portion of the kingdom. It was highest (29·80 inches) in the south-east of England, and lowest (29·5 inches) in the Hebrides. The range of pressure was considerable, and amounted to nearly 1·7 inch at Valencia, where it was greatest, and to 1·3 inch at Falmouth, where it was least. The lowest readings at the western stations occurred with depression No. XXXVIII., the centre of which passed across that region on the 9th and 10th. At Aberdeen, however, the minimum occurred on the 21st, when the centre of depression No. XXXIX. lay over the north of Scotland; while at Falmouth and Kew it occurred on the 7th and 26th respectively. The maxima were recorded at the northern stations at the beginning of the month, when an anticyclone covered the entire kingdom; higher readings were, however, reached at the southern stations on the 12th and 13th, in connexion with the anticyclonic system No. XIX., the centre of which did not extend beyond the southern portion of England.

*Movements of the Depressions.*—A good many depressions came more or less under observation during the month. Most of them travelled in a northerly direction, their centres in many instances keeping to the westward of our coasts, whilst in others (as Nos. XXXVII., XXXVIII., and XXXIX.) they crossed over Ireland or Scotland. Two disturbances followed an easterly track across southern England to the North Sea, and then curved northwards towards the Norwegian coast; and another (No. XLII.), which first appeared near the Shetlands, remained for some time near the south of Norway before it finally travelled away across Scandinavia. Two anticyclonic systems were observed, one at the beginning of the month, covering the whole kingdom, and another later on which only reached south-eastern England; neither system, however, was of a very persistent character.

*Temperature.*—The mean temperature (corrected for height above sea level) was rather above the average for the month in the north and north-west, and normal elsewhere. It varied from 49° in the Shetlands to 56° at the mouth of the English Channel. Some rather high maxima were registered during the earlier days of the month, 75° being reached over south-eastern England on the 5th, when light Southerly anticyclonic airs prevailed. The minima occurred nearly everywhere at the close of the month, under the influence of cold Northerly winds. The range of temperature exceeded 30° at most stations, and at some of those situated in the English Midlands it exceeded 40°.

*Vapour Tension* was highest at the mouth of the English Channel, and along the south-western and southern seaboard; but over the Midlands and the whole of the northern portion of the kingdom its distribution was fairly equal. *Relative Humidity.*—The mean values for this element were distributed rather unequally; but speaking broadly, it is fair to say that the per-centages were tolerably equal all over the kingdom.

*Rainfall.*—This was upon the whole normal, and while at a few stations the average was exceeded, it was not reached at others. The amounts registered ranged from an inch and a quarter in London to 6·5 inches at Ardrossan, and 8·8 inches at Dartmoor. There were some heavy falls, most generally on or near the 9th and 24th, and falls of upwards of an inch in 24 hours occurred at several stations.

TABLE A., OCTOBER.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of OCTOBER 1878; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE In the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation = 100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia - - | 29·684 | 28·503 | 9th, 8 p.m. | 30·190 | 12th, 1 a.m.<br>4 a.m. | 1·687 | 53·2 | 35·2 | 31st, 3 a.m. | 64·6 | 4th, 2 p.m. | 29·4 | ·338 | 83 | 6·613 |
| Armagh - - | ·655 | ·615 | 10th, 5 a.m. | ·267 | 1st, Midt. | 1·652 | 49·9* | 33·4 | 30th, 1 a.m. | 64·9 | 6th, 2 p.m. | 31·5 | ·313 | 88 | 2·835 |
| Glasgow - - | ·613 | ·735 | 10th, 1 p.m. | ·257 | 2nd, 5 a.m. | 1·522 | 49·8 | 32·2 | 31st, 10 p.m. | 63·1 | 5th, 4 p.m. | 30·9 | ·288 | 81 | 4·192 |
| Aberdeen - - | ·613 | 28·700 | 21st, 9 p.m. | ·254 | 2nd, 5 a.m.<br>6 a.m. | 1·554 | 48·9 | 33·4 | 29th, 6 p.m. | 63·0 | 3rd, 1 p.m. | 29·6 | ·299 | 86 | 2·720 |
| Falmouth - - | ·790 | 29·027 | 7th, 7 p.m. | ·330 | 12th, 10 a.m. | 1·303 | 53·8 | 39·8 | 31st, Midt. | 63·4 | 5th, 1 p.m. | 23·6 | ·342 | 82 | 5·860 |
| Stonyhurst - - | ·702 | 28·916 | 10th, 9 a.m. | ·321 | 2nd, 8 a.m. | 1·405 | 49·7 | 33·0 | 29th, 11 p.m. | 66·5 | 5th, 2 p.m. | 33·5 | ·297 | 84 | 5·238 |
| Kew - - | 29·786 | 29·026 | 26th, 9 a.m.<br>10 a.m. | 30·352 | 13th, 10 a.m. | 1·326 | 51·1 | 31·3 | 31st, 6 a.m. | 70·8 | 5th, 2 p.m. | 39·5 | ·315 | 83 | 2·110 |

* Mean for one day is approximate.

TABLE B., October.—Giving a Summary of the Meteorological Observations made at
The Values are not
(The Stations are grouped in Districts, and then arranged in order of

| Names of Districts. | Names of Stations. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | Air Temperature. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Means of | | | Absolute Extremes. | | | |
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| **0.** SCOTLAND, N. - | Sandwick Manse (Orkneys) - | 29·539 | 49·1 | 48·3 | 48·7 | 45·4 | 52·5 | 49·0 | 33·6 | 29th | 59·0 | 9th |
| **1.** SCOTLAND, E. - | Glenalmond - - - | ·632 | 46·9 | 46·4 | 46·7 | 40·8 | 52·6 | 46·7 | 30·3 | 2nd | 63·7 | 3rd |
| **2.** ENGLAND, N.E. - | Seaham - - - - | ·671 | 51·5 | 48·9 | 50·2 | 44·5 | 56·1 | 50·3 | 29·8 | 30th | 71·5 | 3rd |
| | Durham* - - - | ·671 | 50·7 | 47·3 | 49·0 | 43·0 | 55·9 | 49·5 | 29·4 | 29th | 67·7 | 5th |
| | Hull - - - - | ·740 | 50·7 | 48·9 | 49·8 | 44·9 | 57·2 | 51·1 | 31·0 | 30th | 68·5 | 6th |
| | Kelstern 𝔐 - - - | ·748 | 49·6 | 46·7 | 48·2 | 43·3 | 55·3 | 49·3 | 27·3 | 30th | 66·8 | 5th |
| **3.** ENGLAND, E. - | Hillington 𝔐 - - - | ·765 | 50·8 | 47·7 | 49·3 | 42·8 | 58·3 | 50·6 | 26·1 | 31st | 71·6 | 5th |
| | Audley End 𝔐 - - | ·761 | 50·7 | 47·8 | 49·3 | 43·2 | 58·1 | 50·7 | 31·5 | 30th | 72·0 | 5th |
| | Chigwell Row - - - | ·818 | 51·8 | 49·9 | 50·9 | 45·6 | 57·0 | 51·3 | 30·6 | 30th | 72·0 | 6th |
| **4.** MIDLAND COUNTIES. | Wakefield 𝔐 - - - | ·723 | 49·6 | 48·6 | 49·1 | 43·0 | 56·0 | 49·5 | 31·2 | 30th | 67·6 | 5th |
| | Buxton 𝔐 - - - | ·761 | 47·4 | 46·1 | 46·8 | 42·3 | 52·7 | 47·5 | 27·0 | 2nd, 29th | 67·8 | 5th |
| | Cheadle 𝔐 - - - | ·739 | 47·3 | 47·1 | 47·2 | 42·8 | 54·0 | 48·4 | 29·2 | 30th | 67·0 | 5th |
| | Leicester - - - | ·756 | 50·1 | 49·3 | 49·7 | 44·7 | 56·4 | 50·6 | 31·2 | 27th, 30th | 71·9 | 5th |
| | Uppingham - - - | ·756 | 48·9 | 47·0 | 48·0 | 42·8 | 55·5 | 49·2 | 29·0 | 30th | 70·8 | 5th |
| | Oscott - - - - | ·749 | 48·5 | 48·0 | 48·3 | 43·9 | 56·0 | 50·0 | 30·8 | 30th | 71·6 | 5th |
| | Churchstoke 𝔐 - - | ·749 | 49·5 | 48·3 | 48·9 | 43·9 | 55·5 | 49·7 | 31·0 | 30th | 67·8 | 5th |
| | Hereford 𝔐 - - - | ·748 | 50·4 | 48·3 | 49·4 | 44·2 | 56·9 | 50·6 | 33·6 | 31st | 70·1 | 5th |
| **5.** ENGLAND, S. - | Marlborough 𝔐 - - | ·794 | 50·4 | 48·4 | 49·4 | 43·7 | 58·1 | 50·9 | 30·9 | 30th | 72·6 | 5th |
| | Strathfield Turgiss 𝔐 - | ·796 | 51·8 | 48·1 | 50·0 | 42·4 | 59·3 | 50·9 | 30·0 | 13th | 74·2 | 5th |
| | Ramsgate 𝔐 - - - | ·820 | 53·2 | 51·5 | 52·4 | 47·3 | 58·1 | 52·7 | 30·8 | 30th | 66·3 | 3rd |
| | Folkestone - - - | ·814 | 52·9 | 51·1 | 52·0 | 46·7 | 58·2 | 52·5 | 29·0 | 30th | 65·8 | 5th |
| | Southampton† - - | ·800 | 53·4 | 50·6 | 52·0 | 46·5 | 58·6 | 52·6 | 33·2 | 30th | 68·7 | 6th |
| | Hastings - - - | ·815 | 52·7 | 51·8 | 52·3 | 48·2 | 57·6 | 52·9 | 30·4 | 30th | 67·0 | 5th |
| **6.** SCOTLAND, W. - | — | — | — | — | — | — | — | — | — | — | — | — |
| **7.** ENGLAND, N.W. | Douglas - - - | ·657 | 51·6 | 50·9 | 51·3 | 46·3 | 55·4 | 50·9 | 33·2 | 26th | 61·7 | 5th |
| | Prestwich - - - | ·714 | 49·5 | 48·5 | 49·0 | 44·4 | 55·4 | 49·9 | 30·5 | 30th | 68·4 | 5th |
| | Llandudno 𝔐 - - - | ·694 | 53·0 | 51·0 | 52·0 | 47·5 | 59·3 | 53·4 | 37·0 | 29th | 73·0 | 5th |
| **8.** ENGLAND, S.W. - | Caermarthen 𝔐 - - | ·740 | 52·8 | 49·6 | 51·2 | 45·8 | 59·5 | 52·7 | 33·3 | 30th | 71·0 | 5th |
| | Dartmoor 𝔐 - - - | ·786 | 48·4 | 46·5 | 47·5 | 43·4 | 52·8 | 48·1 | 30·5 | 30th | 68·6 | 5th |
| | Babbacombe 𝔐 - - | ·791 | 53·8 | 50·6 | 52·2 | 47·3 | 58·5 | 52·9 | 32·0 | 30th | 65·9 | 1st, 4th |
| **9.** IRELAND, N. - | Markree Castle - - | ·641 | 51·1 | 48·9 | 50·0 | 45·2 | 56·1 | 50·7 | 34·1 | 12th | 66·2 | 4th |
| **10.** IRELAND, S. - | Dublin - - - - | ·693 | 51·3 | 49·9 | 50·6 | 46·8 | 56·4 | 51·6 | 32·9 | 30th | 65·6 | 6th |
| | Parsonstown - - - | ·689 | 51·4 | 48·2 | 49·8 | 45·2 | 57·6 | 51·4 | 30·5 | 31st | 66·6 | 4th |
| CHANNEL - - | Jersey (St. Aubin's) - - | 29·863 | 57·1 | 54·7 | 55·9 | 51·2 | 61·1 | 56·2 | 39·7 | 30th | 67·3 | 4th |

Note.—The stations marked thus 𝔐 are in connection with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of OCTOBER 1878.
· corrected for Diurnal Range.

Latitude, beginning in each case with the Station lying furthest North.)

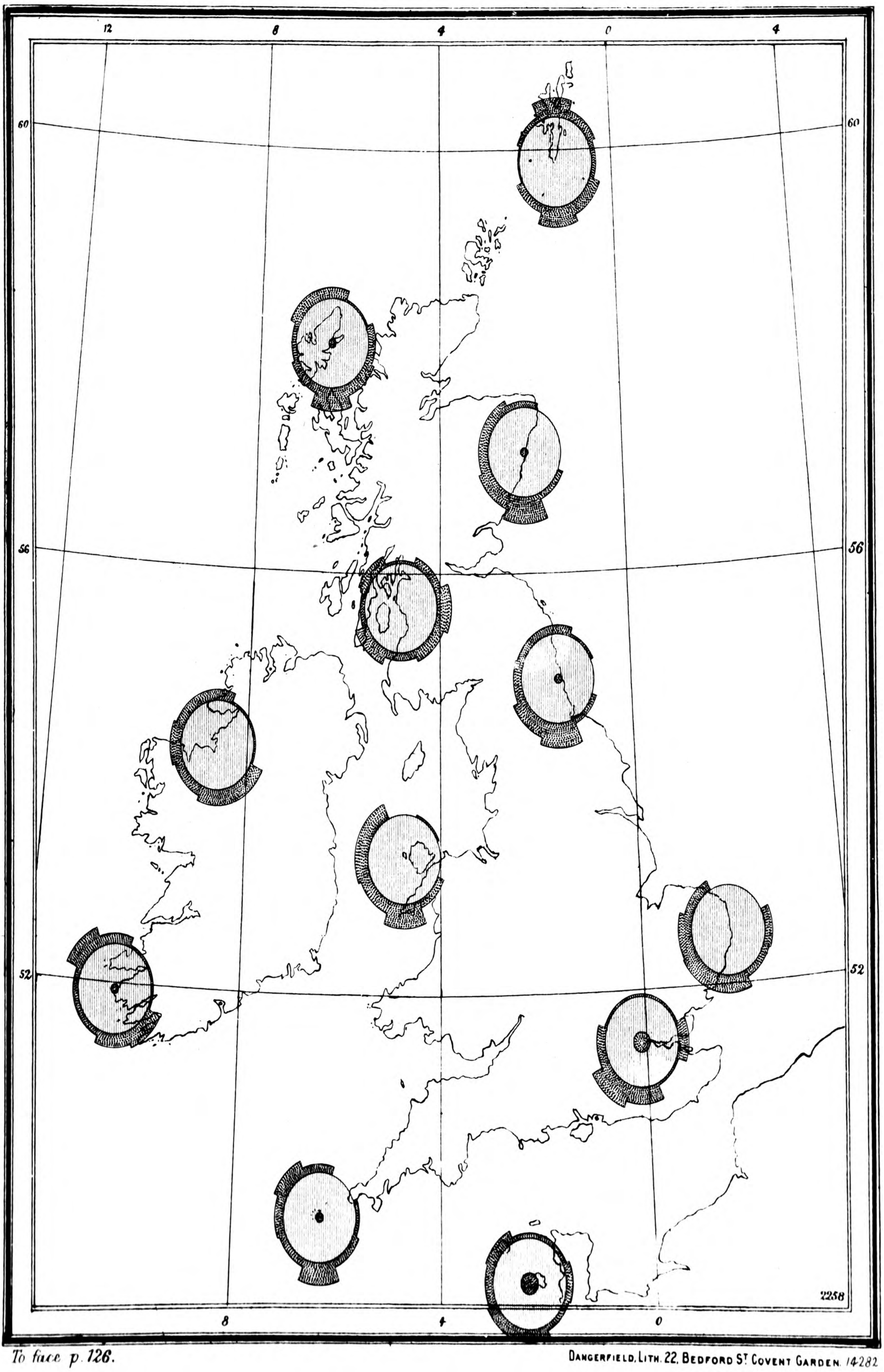
| TENSION OF VAPOUR. | | | RELATIVE HUMIDITY. | | | AMOUNT OF CLOUD (0 to 10). | | | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·293 | ·314 | ·304 | 84 | 93 | 89 | 7·0 | 7·5 | 7·3 | 4·870 | ·740 | 31st | 22 | 2 | 2 | 0 | 3 | 14 | 4 | 10 | 2 | 0 | 12 | 21 | 3 | 5 | 4 | 5 |
| ·286 | ·289 | ·288 | 87 | 89 | 88 | 7·1 | 6·8 | 7·0 | 4·696 | ·968 | 23rd | 15 | 2 | 0 | 0 | 3 | 11 | 1 | 2 | 3 | 9 | 6 | 2 | 14 | 10 | 9 | 7 |
| ·312 | ·304 | ·308 | 82 | 88 | 85 | 5·1 | 4·9 | 5·0 | 1·685 | ·580 | 30th | 16 | 1 | 0 | 0 | 5 | 4 | 0 | 3 | 0 | 0 | 5 | 18 | 14 | 6 | 8 | 8 |
| ·319 | ·300 | ·310 | 85 | 89 | 87 | 7·4 | 6·5 | 7·0 | 1·928 | ·461 | 9th | 20 | 0 | 0 | 0 | 1 | 12 | 0 | 4 | 0 | 2 | 8 | 23 | 11 | 5 | 9 | 0 |
| ·329 | ·309 | ·319 | 89 | 90 | 90 | 5·6 | 5·4 | 5·5 | 2·570 | ·780 | 24th | 19 | 0 | 0 | 0 | 5 | 10 | 1 | 0 | 1 | 5 | 5 | 5 | 15 | 12 | 16 | 3 |
| ·319 | ·302 | ·311 | 88 | 92 | 90 | 6·5 | 4·7 | 5·6 | 2·367 | ·596 | 24th | 17 | 0 | 0 | 0 | 5 | 8 | 3 | 3 | 2 | 6 | 11 | 14 | 12 | 7 | 6 | 1 |
| ·338 | ·315 | ·327 | 88 | 93 | 91 | 7·0 | 4·7 | 5·9 | 2·861 | ·682 | 24th | 16 | 1 | 0 | 0 | 4 | 10 | 0 | 2 | 1 | 8 | 6 | 12 | 19 | 4 | 10 | 0 |
| ·332 | ·313 | ·323 | 88 | 93 | 90 | 6·3 | 4·1 | 5·2 | 2·410 | ·680 | 21st | 17 | 1 | 1 | 1 | 3 | 6 | 0 | 0 | 3 | 4 | 4 | 10 | 17 | 3 | 15 | 6 |
| ·321 | ·310 | ·316 | 83 | 87 | 85 | 6·9 | 6·0 | 6·5 | 1·880 | ·300 | 24th | 15 | 1 | 0 | 0 | 1 | 8 | 1 | 3 | 4 | 5 | 5 | 15 | 9 | 7 | 5 | 9 |
| ·312 | ·301 | ·307 | 86 | 85 | 86 | 7·6 | 6·9 | 7·3 | 2·200 | ·450 | 24th | 18 | 0 | 0 | 0 | 0 | 12 | 0 | 2 | 2 | 6 | 8 | 12 | 8 | 12 | 4 | 8 |
| ·296 | ·286 | ·291 | 89 | 89 | 89 | 7·4 | 6·8 | 7·1 | 5·940 | ·870 | 10th | 21 | 2 | 2 | 2 | 0 | 8 | 1 | 0 | 0 | 3 | 9 | 1 | 13 | 14 | 18 | 4 |
| ·299 | ·299 | ·299 | 91 | 92 | 92 | 7·1 | 6·2 | 6·7 | 3·350 | ·540 | 25th | 18 | 2 | 1 | 2 | 3 | 13 | 10 | 3 | 2 | 7 | 15 | 13 | 11 | 4 | 7 | 0 |
| ·308 | ·308 | ·308 | 85 | 88 | 87 | 7·6 | 4·8 | 6·2 | 2·570 | ·400 | 24th | 20 | 1 | 1 | 1 | 1 | 9 | 0 | 1 | 4 | 4 | 2 | 10 | 21 | 5 | 4 | 11 |
| ·318 | ·309 | ·314 | 90 | 93 | 92 | 7·1 | 5·3 | 6·2 | 2·447 | ·496 | 29th | 20 | 1 | 1 | 1 | 4 | 11 | 2 | 5 | 1 | 5 | 4 | 13 | 14 | 9 | 6 | 5 |
| ·319 | ·317 | ·318 | 92 | 93 | 92 | 7·8 | 6·9 | 7·4 | 3·170 | ·470 | 21st | 20 | 2 | 0 | 1 | 3 | 17 | 3 | 4 | 6 | 4 | 5 | 16 | 10 | 6 | 6 | 5 |
| ·315 | ·308 | ·312 | 88 | 90 | 89 | 7·1 | 7·4 | 7·3 | 4·550 | ·904 | 9th | 21 | 1 | 0 | 0 | 0 | 9 | 2 | 4 | 4 | 4 | 20 | 4 | 12 | 7 | 6 | 1 |
| ·323 | ·312 | ·318 | 87 | 90 | 89 | 6·8 | 6·0 | 6·4 | 3·737 | ·790 | 9th | 25 | 3 | 0 | 0 | 5 | 12 | 2 | 5 | 2 | 5 | 6 | 8 | 2 | 12 | 4 | 18 |
| ·328 | ·317 | ·323 | 88 | 92 | 90 | 6·6 | 6·4 | 6·5 | 4·018 | ·830 | 9th | 17 | 0 | 0 | 0 | 1 | 11 | 0 | 1 | 1 | 3 | 0 | 8 | 14 | 6 | 1 | 28 |
| ·346 | ·322 | ·334 | 88 | 94 | 91 | 6·4 | 5·5 | 6·0 | 3·023 | ·660 | 19th | 13 | 1 | 0 | 0 | 4 | 9 | 0 | 0 | 0 | 5 | 3 | 6 | 12 | 11 | 11 | 14 |
| ·344 | ·337 | ·341 | 84 | 87 | 85 | 6·8 | 5·0 | 5·9 | 3·671 | 1·120 | 25th | 15 | 1 | 0 | 0 | 2 | 7 | 2 | 0 | 3 | 6 | 3 | 16 | 11 | 16 | 3 | 4 |
| ·341 | ·324 | ·333 | 85 | 86 | 86 | 7·1 | 5·6 | 6·4 | 2·380 | ·720 | 25th | 13 | 2 | 0 | 0 | 1 | 7 | 4 | 8 | 1 | 13 | 3 | 10 | 8 | 14 | 5 | 0 |
| ·333 | ·323 | ·328 | 80 | 86 | 83 | 6·7 | 5·6 | 6·2 | 3·551 | ·768 | 9th | 16 | 0 | 0 | 0 | 3 | 9 | 3 | 1 | 11 | 3 | 8 | 4 | 15 | 3 | 14 | 3 |
| ·341 | ·329 | ·335 | 84 | 84 | 84 | 6·4 | 4·9 | 5·7 | 3·245 | 1·050 | 25th | 15 | 0 | 0 | 0 | 6 | 9 | 4 | 3 | 11 | 6 | 0 | 13 | 9 | 14 | 4 | 2 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·337 | ·327 | ·332 | 86 | 85 | 86 | 7·2 | 6·8 | 7·0 | 5·157 | 1·168 | 21st | 19 | 1 | 3 | 1 | 0 | 12 | 9 | 5 | 0 | 5 | 14 | 7 | 7 | 13 | 5 | 6 |
| ·307 | ·305 | ·306 | 86 | 89 | 88 | 7·4 | 6·1 | 6·8 | 3·815 | ·635 | 24th | 22 | 0 | 6 | 1 | 1 | 10 | 0 | 6 | 3 | 3 | 7 | 18 | 6 | 5 | 6 | 8 |
| ·325 | ·316 | ·321 | 80 | 84 | 82 | 6·3 | 6·8 | 6·6 | 3·780 | ·580 | 9th | 18 | 0 | 4 | 0 | 4 | 12 | 2 | 3 | 1 | 1 | 4 | 8 | 15 | 24 | 6 | 0 |
| ·354 | ·335 | ·345 | 87 | 93 | 90 | 6·7 | 5·5 | 6·1 | 6·360 | 1·000 | 9th | 21 | 1 | 2 | 0 | 3 | 9 | 2 | 4 | 0 | 8 | 3 | 4 | 13 | 16 | 2 | 12 |
| ·316 | ·303 | ·310 | 92 | 94 | 93 | 7·1 | 7·6 | 7·4 | 8·790 | 1·530 | 9th | 23 | 2 | 1 | 0 | 1 | 15 | 7 | 3 | 1 | 10 | 4 | 9 | 8 | 7 | 16 | 4 |
| ·356 | ·331 | ·344 | 85 | 88 | 86 | 5·9 | 6·4 | 6·2 | 3·460 | ·730 | 9th | 17 | 2 | 1 | 1 | 3 | 8 | 4 | 2 | 6 | 5 | 3 | 8 | 11 | 17 | 7 | 3 |
| ·329 | ·308 | ·319 | 86 | 87 | 86 | 8·3 | 7·5 | 7·9 | 5·247 | ·814 | 24th | 24 | 0 | 3 | 0 | 0 | 15 | 0 | 7 | 0 | 1 | 21 | 12 | 4 | 5 | 8 | 4 |
| ·330 | ·314 | ·322 | 85 | 85 | 85 | 6·0 | 4·3 | 5·2 | 2·095 | ·965 | 7th | 16 | 0 | 1 | 1 | 4 | 5 | 3 | 3 | 1 | 0 | 8 | 13 | 11 | 14 | 9 | 3 |
| ·344 | ·314 | ·329 | 88 | 91 | 89 | 7·0 | 4·9 | 6·0 | 2·878 | ·743 | 7th | 21 | 0 | 2 | 0 | 2 | 9 | 0 | 2 | 0 | 3 | 11 | 7 | 14 | 6 | 5 | 14 |
| ·365 | ·347 | ·356 | 77 | 80 | 79 | 6·0 | 4·5 | 5·3 | 4·799 | ·810 | 31st | 22 | 0 | 5 | 1 | 5 | 6 | 4 | 3 | 3 | 11 | 8 | 5 | 10 | 7 | 11 | 4 |

TABLE C., OCTOBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS, during the Month of OCTOBER 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. At 8 a.m. | Means of Minima. | Means of Maxima. | Means of Min. and Max. combined. | Absolute Extremes. Minimum. | Date. | Maximum. | Date. | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. Total Fall in the Month. | Maximum Fall in One Day. | Date. | WEATHER. No. of Days of Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | WIND. No. of Observations of North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| 0. SCOTLAND, N. | Sumburgh Head | 29·545 | 48·5 | 44·9 | 52·1 | 48·5 | 32 | 29th | 57 | 6th, 9th 18th. | 0·311 | 92 | 7·1 | 5·13 | 1·05 | 21st | 23 | 0 | 0 | 1 | 1 | 11 | 5 | 7 | 3 | 2 | 5 | 8 | 3 | 1 | 2 | 0 |
| | Thurso | 29·553 | 48·3 | 45·0 | 55·1 | 50·1 | 34 | 30th | 63 | 6th, 7th, 18th. | ·318 | 95 | 7·2 | 3·76 | 0·50 | 27th | 26 | 1 | 1 | 0 | 3 | 14 | 2 | 3 | 1 | 0 | 11 | 7 | 3 | 3 | 2 | 1 |
| | Wick | 29·548 | 48·6 | 44·2 | 54·5 | 49·4 | 32 | 28th, 30th | 61 | 6th | ·302 | 89 | 6·4 | 1·86 | 0·32 | 29th | 17 | 1 | 0 | 0 | 7 | 14 | 1 | 1 | 0 | 0 | 0 | 14 | 4 | 6 | 6 | 0 |
| | Stornoway | 29·503 | 48·3 | 44·1 | 52·4 | 48·3 | 30 | 30th | 59 | 5th, 6th 8th. | ·318 | 94 | 6·4 | 4·96 | 0·90 | 23rd | 23 | 3 | 3 | 0 | 2 | 8 | 6 | 4 | 1 | 3 | 4 | 9 | 3 | 2 | 4 | 1 |
| 1. SCOTLAND, E. | Nairn | 29·571 | 47·6 | 43·9 | 54·4 | 49·2 | 33 | 2nd, 30th | 65 | 6th | ·282 | 86 | 5·8 | 2·14 | 0·34 | 31st | 22 | 1 | 0 | 0 | 6 | 10 | 3 | 1 | 1 | 1 | 2 | 0 | 9 | 1 | 3 | 13 |
| | Aberdeen | 29·599 | 47·7 | 44·7 | 53·7 | 49·2 | 33 | 26th, 30th | 64 | 3rd | ·292 | 89 | 4·6 | 2·40 | 0·49 | 30th | 18 | 2 | 0 | 0 | 12 | 5 | 2 | 2 | 0 | 0 | 2 | 12 | 6 | 4 | 4 | 1 |
| | Leith | 29·599 | 48·6 | 44·2 | 56·6 | 50·4 | 34 | 2nd, 30th | 68 | 7th | ·298 | 88 | 6·0 | 1·61 | 0·53 | 10th | 12 | 0 | 0 | 0 | 1 | 6 | 2 | 3 | 0 | 2 | 4 | 5 | 10 | 3 | 2 | 2 |
| 2. ENGLAND, N.E. | Shields | 29·676 | 49·2 | 45·6 | 55·3 | 50·5 | 31 | 30th | 65 | 3rd, 5th, 7th. | ·296 | 85 | 6·0 | 1·48 | 0·55 | 30th | 19 | 2 | 0 | 0 | 7 | 10 | 8 | 3 | 1 | 0 | 2 | 10 | 7 | 4 | 3 | 1 |
| | Scarborough | 29·708 | 49·6 | 47·1 | 54·9 | 51·0 | 32 | 30th | 64 | 6th, 7th | ·317 | 90 | 7·2 | 2·47 | 0·77 | 28th | 18 | 0 | 2 | 0 | 5 | 14 | 1 | 2 | 0 | 0 | 5 | 9 | 6 | 6 | 3 | 0 |
| | York | 29·715 | 48·1 | 43·9 | 56·5 | 50·2 | 29 | 30th | 67 | 7th | ·306 | 91 | 6·4 | 1·62 | 0·43 | 21st | 17 | 1 | 1 | 0 | 6 | 13 | 0 | 2 | 1 | 3 | 4 | 12 | 1 | 6 | 2 | 0 |
| 3. ENGLAND, E. | Yarmouth | 29·775 | 50·1 | 46·2 | 55·5 | 50·9 | 29 | 30th | 64 | 7th, 8th | ·336 | 93 | 5·6 | 2·06 | 0·56 | 21st | 17 | 0 | 0 | 0 | 9 | 7 | 5 | 0 | 0 | 4 | 3 | 7 | 7 | 6 | 4 | 0 |
| | Cambridge | 29·777 | 47·4 | 43·0 | 59·4 | 51·2 | 30 | 30th | 75 | 5th | ·310 | 95 | 6·4 | 2·12 | 0·77 | 24th | 15 | 1 | 0 | 1 | 11 | 17 | 0 | 1 | 1 | 3 | 1 | 10 | 8 | 3 | 3 | 1 |
| 4. MIDLAND COUNTIES. | Nottingham | 29·745 | 48·4 | 43·3 | 57·8 | 50·6 | 27 | 30th | 74 | 5th | ·307 | 91 | 7·3 | 2·95 | 0·59 | 24th | 22 | 2 | 0 | 6 | 7 | 19 | 3 | 2 | 0 | 1 | 3 | 11 | 2 | 2 | 2 | 8 |
| | Oxford | 29·769 | 48·2 | 44·5 | 57·3 | 50·9 | 32 | 31st | 72 | 5th | ·302 | 91 | 7·3 | 3·04 | 1·02 | 19th | 15 | 0 | 0 | 0 | 7 | 19 | 0 | 0 | 5 | 1 | 0 | 12 | 5 | 3 | 2 | 3 |
| 5. ENGLAND, S. | London | 29·788 | 49·5 | 45·5 | 59·5 | 52·5 | 32 | 30th, 31st | 75 | 5th | ·313 | 88 | 5·8 | 1·25 | 0·23 | 21st | 14 | 2 | 1 | 0 | 10 | 12 | 4 | 1 | 1 | 5 | 1 | 6 | 9 | 4 | 1 | 3 |
| | Dover | 29·804 | 52·7 | 49·5 | 57·1 | 53·3 | 32 | 30th | 64 | 6th, 7th | ·326 | 82 | 4·6 | 3·25 | 0·84 | 9th | 12 | 1 | 0 | 0 | 11 | 4 | 3 | 2 | 1 | 5 | 0 | 2 | 10 | 6 | 4 | 1 |
| | Hurst Castle | 29·775 | 53·5 | 48·3 | 59·3 | 53·8 | 33 | 30th | 68 | 5th | ·362 | 88 | 5·2 | 2·57 | 0·65 | 25th | 15 | 0 | 0 | 1 | 9 | 5 | 3 | 2 | 4 | 5 | 2 | 4 | 4 | 4 | 5 | 1 |
| 6. SCOTLAND, W. | Ardrossan | 29·600 | 50·4 | 47·9 | 55·7 | 51·8 | 36 | 31st | 63 | 5th | ·310 | 85 | 7·7 | 6·49 | 1·05 | 23rd | 20 | 0 | 0 | 0 | 2 | 17 | 9 | 1 | 3 | 7 | 5 | 3 | 6 | 2 | 4 | 0 |
| 7. ENGLAND, N.W. | Liverpool | 29·691 | 49·3 | 46·8 | 55·5 | 51·2 | 39 | 2nd, 30th | 65 | 3rd, 5th, 6th. | ·304 | 87 | 6·9 | 2·55 | 0·46 | 1st | 21 | 0 | 0 | 0 | 3 | 11 | 1 | 2 | 0 | 3 | 14 | 4 | 3 | 3 | 2 | 0 |
| | Holyhead | 29·679 | 51·7 | 49·1 | 56·8 | 53·0 | 38 | 30th | 68 | 5th | ·332 | 86 | 6·4 | 3·98 | 0·82 | 9th | 23 | 0 | 1 | 0 | 4 | 7 | 5 | 0 | 1 | 0 | 3 | 10 | 5 | 6 | 6 | 0 |
| 8. ENGLAND, S.W. | Pembroke | 29·717 | 53·2 | 50·4 | 56·6 | 53·5 | 40 | 30th, 31st | 64 | 5th | ·344 | 85 | 6·6 | 4·89 | 0·65 | 23rd | 22 | 0 | 2 | 0 | 3 | 10 | 14 | 3 | 2 | 3 | 4 | 5 | 3 | 5 | 6 | 0 |
| | Plymouth | 29·773 | 50·8 | 47·5 | 59·0 | 53·3 | 35 | 30th | 68 | 5th | ·340 | 91 | 4·8 | 3·34 | 0·70 | 25th | 21 | 0 | 0 | 0 | 15 | 12 | 7 | 2 | 2 | 4 | 3 | 4 | 4 | 3 | 5 | 4 |
| 9. IRELAND, N. | Greencastle | 29·578 | 50·1 | 46·0 | 56·3 | 51·2 | 35 | 30th | 67 | 6th | ·313 | 86 | 9·5 | 5·96 | 0·79 | 29th | 22 | 0 | 1 | 1 | 0 | 27 | 0 | 4 | 2 | 2 | 7 | 7 | 5 | 2 | 2 | 0 |
| | Donaghadee | 29·625 | 49·6 | 46·5 | 54·2 | 50·4 | 38 | 22nd, 26th 29th, 30th. | 64 | 3rd | ·330 | 93 | 5·9 | 3·47 | 0·79 | 7th | 18 | 0 | 0 | 0 | 6 | 10 | 4 | 2 | 1 | 1 | 3 | 10 | 6 | 6 | 2 | 0 |
| | Mullaghmore | 29·596 | 51·8 | 48·6 | 55·8 | 52·2 | 36 | 30th | 65 | 4th, 5th | ·348 | 90 | 8·5 | 5·71 | 0·72 | 30th | 23 | 0 | 1 | 0 | 0 | 15 | 5 | 4 | 1 | 1 | 6 | 6 | 4 | 5 | 4 | 0 |
| 10. IRELAND, S. | Kingstown | 29·672 | 51·2 | 48·7 | 55·8 | 52·3 | 35 | 30th | 65 | 4th | ·318 | 83 | 5·7 | 1·79 | 0·81 | 7th | 13 | 0 | 0 | 0 | 4 | 4 | 6 | 1 | 0 | 0 | 4 | 10 | 4 | 7 | 4 | 1 |
| | Valencia | 29·695 | 53·5 | 49·3 | 57·4 | 53·4 | 33 | 31st | 65 | 5th, 18th | ·340 | 83 | 7·3 | 6·30 | 1·25 | 7th | 25 | 0 | 0 | 0 | 0 | 9 | 7 | 4 | 1 | 1 | 7 | 5 | 2 | 2 | 8 | 1 |
| | Roche's Point | 29·715 | 52·4 | 49·1 | 57·6 | 53·4 | 37 | 30th | 63 | 3rd, 4th, 5th, 6th. | ·330 | 84 | 5·6 | 3·60 | 0·92 | 7th | 21 | 0 | 0 | 1 | 6 | 8 | 7 | 4 | 1 | 1 | 3 | 5 | 5 | 6 | 6 | 0 |
| CHANNEL ISLANDS | Scilly (St. Mary's) | 29·773 | 55·5 | 52·3 | 58·1 | 55·2 | 44 | 30th | 64 | 5th | ·386 | 88 | 7·6 | 4·42 | 0·93 | 25th | 25 | 0 | 3 | 0 | 1 | 9 | 10 | 3 | 0 | 2 | 3 | 9 | 3 | 4 | 6 | 1 |
| | Jersey (Noirmont) | 29·790 | 54·7 | 51·2 | 59·5 | 55·4 | 40 | 30th | 67 | 5th | ·374 | 88 | 5·7 | 4·53 | 0·75 | 31st | 16 | 0 | 3 | 2 | 7 | 8 | 9 | 2 | 2 | 3 | 2 | 5 | 5 | 4 | 5 | 3 |

# MONTHLY WIND CHART FOR OCTOBER 1878.

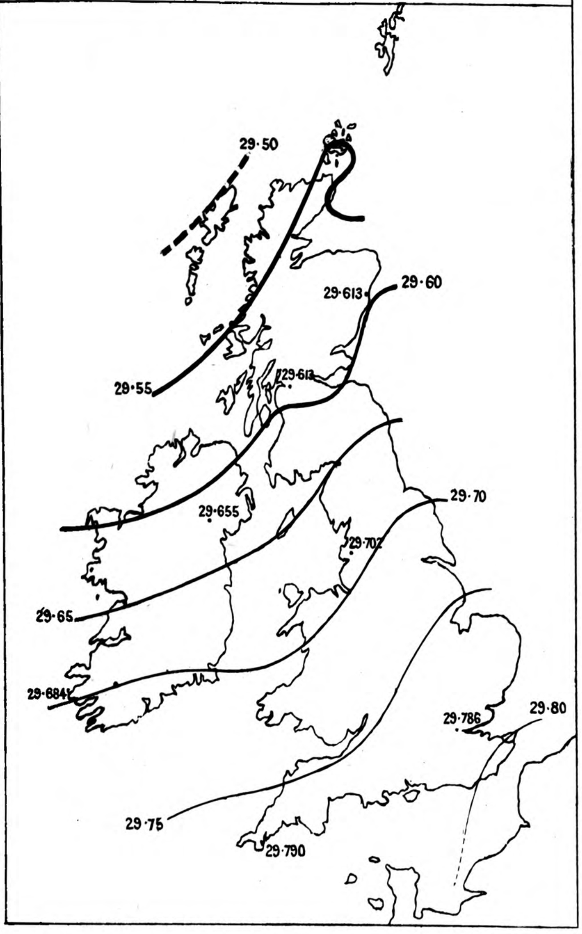

12
8
4
0
4
60
60
56
56
52
52
2258
8
4
0

*To face p. 126.*

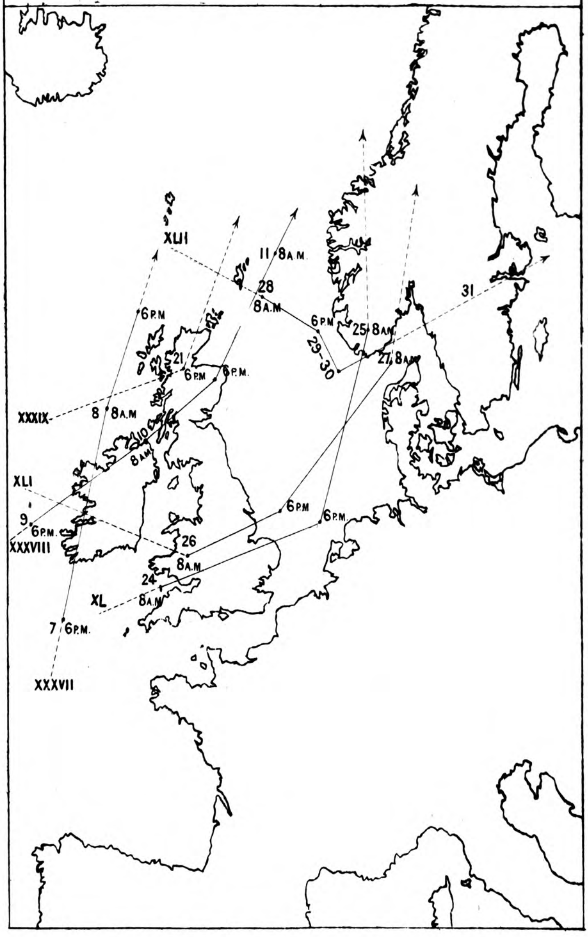
DANGERFIELD, LITH. 22, BEDFORD ST. COVENT GARDEN. 14282

# MONTHLY WEATHER CHART. OCTOBER 1878

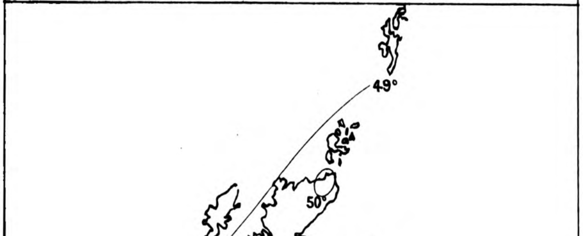
## 1. DISTRIBUTION OF MEAN PRESSURE


29·50
29·613
29·60
29·55
29·613
29·655
29·70
29·702
29·65
29·684
29·786
29·80
29·75
29·790

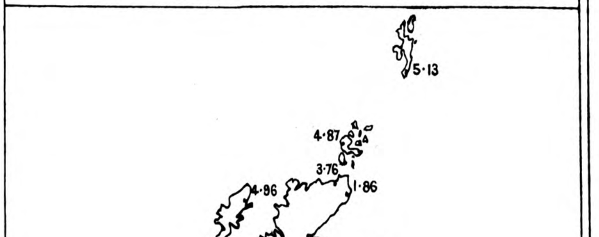
## 2. MOVEMENTS OF DEPRESSIONS.


XLII
11 8A.M.
28
8A.M.
6P.M.
25 8A.M.
29 30
31
27 8A.M.
21
6P.M.
6P.M.
6P.M.
XXXIX
8
8A.M.
10
8A.M.
XLI
9
6P.M.
XXXVIII
6P.M.
6P.M.
26
8A.M.
24
XL
8A.M.
7 6P.M.
XXXVII

## 3. DISTRIBUTION OF MEAN TEMPERATURE


49°
50°
49°
49°
48·9
50°
50°
49·8
51°
51°
52°
49°9
49·7
50°
53°
53°2
52°
51·1
53°
54°
55°
53·8
54°
55°
56°

## 4. RAINFALL


5·13
4·87
3·76
4·96
1·86
2·14
2·72
4·70
4·19
6·49
1·61
5·96
1·48
1·69
5·71
2·84
3·47
1·93
2·47
5·25
5·16
1·62
2·57
5·24
2·20
3·82
2·88
2·10
3·98
2·55
2·37
1·79
3·78
5·94
3·35
2·95
2·86
2·57
2·45
4·55
3·17
2·06
6·61
3·74
3·04
2·12
2·41
6·36
3·80
1·88
4·85
1·25
4·02
2·11
3·67
3·02
3·25
2·38
3·55
8·79
2·57
3·25
3·46
4·42
3·34
5·86
4·53
4·80

*To follow Wind Chart for October*

DANGERFIELD. LITH. 22, BEDFORD ST. COVENT GARDEN. 14283.

## REMARKS FOR NOVEMBER 1878.

(*Tables A. to C., November, with Monthly Wind and Weather Charts.*)

*Wind.*—The wind chart for the month exhibits a very marked predominance of Northerly (North-east to North-west) winds; the percentages of winds from points to the southward of West and East being everywhere very small. Northerly winds prevailed almost without interruption during the first week, blowing at first with light or moderate force, but freshening after the first two or three days. On the 7th they backed to the Westward and fell light, but by the following morning they had risen very much in force, and were circulating round a low-pressure centre lying over northern England. A strong Westerly gale therefore blew in the Channel, strong Northerly winds in Ireland, and fresh Easterly winds over Scotland. By the close of the 8th Northerly winds had again become general, and varied in force from a strong breeze to a gale, after which they moderated and backed again to West, and a little later to South-west and South. On the 10th West was again the general direction, and in the Channel it blew a gale, but during the day it veered to North over Ireland and Scotland, and rose to a gale there also. North-westerly to Northerly winds ensued, and, with the exception of a short spell of Easterly winds experienced in the Channel on the 12th, they continued to blow, occasionally very strongly, till the 18th. An anticyclone then became developed over the British Isles, and while light Easterly winds blew over southern England, Westerly airs began to spread over Scotland. On the 21st calms and light variable airs became very general, and continued so for a couple of days. Then a South-easterly breeze sprang up in the south and west, and extended itself northwards; but it soon shifted again to the Northward, and during the remainder of the month, notwithstanding some temporary changes both to the Eastward and Westward, this continued to be the most prevalent direction.

*Pressure.*—While the mean pressure for the month was nearly normal in amount, its distribution was far otherwise, the mean isobars shown on the monthly map lying nearly north and south, in accordance with the prevalent Northerly wind already referred to. The highest mean value was 29·97 inches in the south-west of Ireland, and the lowest 29·7 inches on the coast of Norfolk. The greatest range of the barometer was observed in the north of Scotland, amounting at Aberdeen to 1·4 inch, while at Valencia it was only 1·1 inch. At the western stations the highest readings occurred quite early in the month, when the centre of anticyclonic system No. XX. lay off the Irish coast; but at all the other observatories the maxima occurred with another anticyclonic system (No. XXII.) which lay over the kingdom about the 19th. The minima were recorded at the northern and western stations on the 10th, in connexion with depression No. XLIV., but in the south of England they were registered between the 12th and 15th, during which interval depression No. XLV. lay in the neighbourhood of our coasts.

*Movements of the Depressions.*—Only a few cyclonic disturbances were observed during the month. One or two crossed over the extreme northern limits of our area, but only three of any importance came near the United Kingdom. The first of these travelled from the north of Ireland to Holland, and thence in a north-easterly direction up the Baltic. The second crossed the north of Scotland to Norway, and then turning northwards disappeared over the ocean; while the remaining one (No. XLV.), after passing eastward along the Channel, remained for several hours near the Netherlands, and finally disappeared over France. At the beginning of the month an anticyclonic system lay to the westward of Ireland, but never came over the British Isles; and a second was observed to the southward of England about a week later. A third system followed close upon the dispersion of the depression (No. XLV.)

just mentioned, and in this instance it spread itself over the British Isles from about the 18th to the 23rd.

*Temperature.*—The mean temperature for the month was generally low, decreasing from about 46° at the mouth of the English Channel to 39° or less over the northern half of England, central Ireland, and the northern half of Scotland. The maximum temperatures were nowhere much above 50°, and as a rule were some degrees less, while the minima were generally between 20° and 30°. The range of temperature was therefore not great, and further there was a great deal of irregularity in the dates of occurrence of both extremes.

*Vapour Tension.*—Vapour tension was much higher at the mouth of the Channel than elsewhere, and was generally greater at stations near the southern and western coasts than elsewhere; over the greater part of Great Britain the mean values were very uniformly distributed. *Relative Humidity* was also pretty equal over England and the greater part of Ireland, but was lower over central Scotland and the southern and south-western stations in England and Ireland.

*Rainfall.*—All along the east coast of England the fall of rain was much above the average, reaching the large total of 8·2 inches at Yarmouth, nearly 7·6 inches at Hillington, and 7·4 inches at Durham. It was also very large in the Channel Islands, and there too the fall exceeded 8 inches. As a rule, however, it was not large at the western and northern stations, and indeed at many of them the fall was a good deal less than the average. In some districts the heaviest falls took place on the 9th or 10th, and in others on the 14th or 15th. Falls of upwards of an inch were recorded at several stations, the largest being 1·67 inch at Sumburgh Head on the 10th; 1·56 inch at Durham on the 15th; and 1·54 inch at Hillington on the 14th.

TABLE A., NOVEMBER.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of NOVEMBER 1878, together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE In the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation = 100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| | ins. | ins. | D. H. | ins. | D. H. | ins. | ° | ° | D. H. | ° | D. H. | ° | in. | % | ins. |
| Valencia - - | 29·966 | 29·373 | 10th, 1 p.m. | 30·477 | 2nd, 11 p.m. | 1·104 | 43·9 | 33·1 | 26th, 2 a.m. | 53·8 | 10th, 1 a.m. | 20·7 | ·231 | 80 | 3·477 |
| Armagh - - | ·899 | ·175 | 10th, 2 p.m. | ·442 | 19th, Midt. | 1·267 | 37·6 | 26·2 | 12th, 7 a.m. | 47·8 | 9th, 11 p.m. | 21·6 | ·202 | 90 | 1·537 |
| Glasgow - - | ·818 | 29·028 | 10th, 3 p.m. | ·380 | 19th, 11 a.m. }<br>Noon. } | 1·352 | 38·6 | 26·8 | 29th, 2 a.m. | 47·0 | 10th, 1 p.m. | 20·2 | ·180 | 81 | 1·621 |
| Aberdeen - - | ·790 | 28·947 | 10th 10 p.m. | ·335 | 18th, 11 p.m. | 1·388 | 39·0 | 28·5 | 29th, 6 a.m. | 49·1 | 21st, 2 p.m. | 20·6 | ·201 | 85 | 3·845 |
| Falmouth - - | ·850 | 29·245 | 12th, Noon | ·486 | 19th, 9 p.m. | 1·241 | 43·4 | 32·8 | 12th, 4 p.m. | 53·5 | 24th, 3 p.m. | 20·7 | ·224 | 79 | 6·475 |
| Stonyhurst - | ·791 | ·112 | 10th, 4 p.m. }<br>5 p.m. } | ·503 | 19th, 6 p.m. }<br>9 p.m. } | 1·391 | 37·5 | 27·1 | 26th, Midt. | 47·7 | 18th, 2 p.m. | 20·6 | ·186 | 83 | 3·024 |
| Kew - - | 29·755 | 29·205 | 15th, 5 p.m. | 30·487 | 19th, 9 p.m. | 1·282 | 40·0 | 29·0 | 29th, Midt. | 52·4 | 25th, 11 a.m. | 23·4 | ·209 | 85 | 2·515 |

TABLE B., NOVEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at
The values are not

(The Stations are grouped in Districts, and then arranged in order of

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Means of | | | Absolute Extremes. | | | |
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| **0.** SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·805 | 38·2 | 38·5 | 38·4 | 35·1 | 42·8 | 39·0 | 27·0 | 24th | 50·2 | 20th |
| **1.** SCOTLAND, E. | Glenalmond | ·827 | 37·2 | 36·7 | 37·0 | 32·9 | 41·2 | 37·1 | 22·5 | 29th | 46·5 | 10th |
| **2.** ENGLAND, N.E. | Seaham | ·751 | 39·8 | 39·2 | 39·5 | 34·4 | 44·0 | 39·2 | 28·8 | 12th | 50·1 | 10th |
| | Durham* | ·756 | 38·8 | 36·4 | 37·6 | 32·5 | 42·0 | 37·3 | 26·3 | 22nd | 49·0 | 10th |
| | Hull | ·743 | 38·3 | 37·6 | 38·0 | 33·7 | 43·3 | 38·5 | 25·0 | 30th | 52·5 | 13th |
| | Kelstern 𝔐 | ·747 | 36·1 | 35·8 | 36·0 | 32·1 | 41·5 | 36·8 | 26·9 | 12th | 49·6 | 19th |
| **3.** ENGLAND, E. | Hillington 𝔐 | ·722 | 39·3 | 38·6 | 39·0 | 34·3 | 44·5 | 39·4 | 20·2 | 30th | 51·2 | 25th |
| | Audley End 𝔐 | ·715 | 37·9 | 38·1 | 38·0 | 33·9 | 43·5 | 38·7 | 21·0 | 30th | 53·1 | 25th |
| | Chigwell Row | ·772 | 39·3 | 39·1 | 39·2 | 35·3 | 44·1 | 39·7 | 30·1 | 30th | 52·0 | 25th |
| **4.** MIDLAND COUNTIES. | Wakefield 𝔐 | ·777 | 37·7 | 37·4 | 37·6 | 33·2 | 43·0 | 38·1 | 25·2 | 20th | 48·9 | 10th |
| | Buxton 𝔐 | ·812 | 35·6 | 35·0 | 35·3 | 30·7 | 40·3 | 35·5 | 22·6 | 20th | 47·5 | 1st |
| | Cheadle 𝔐 | ·790 | 34·8 | 35·0 | 34·9 | 31·5 | 40·6 | 36·1 | 23·8 | 21st | 46·7 | 2nd, 18th |
| | Leicester | ·773 | 37·9 | 38·1 | 38·0 | 33·7 | 42·8 | 38·3 | 28·5 | 21st | 49·4 | 1st |
| | Uppingham | ·761 | 36·5 | 36·5 | 36·5 | 32·9 | 42·1 | 37·5 | 28·8 | 23rd | 49·9 | 25th |
| | Oscott | ·795 | 36·0 | 36·0 | 36·0 | 32·9 | 41·9 | 37·4 | 28·4 | 29th | 47·8 | 10th |
| | Churchstoke 𝔐 | ·856 | 35·7 | 36·0 | 35·9 | 31·5 | 41·6 | 36·6 | 23·3 | 12th | 52·1 | 10th |
| | Hereford 𝔐 | ·807 | 37·8 | 36·5 | 37·2 | 33·4 | 43·3 | 38·4 | 25·9 | 27th | 53·2 | 10th |
| **5.** ENGLAND, S. | Marlborough 𝔐 | ·803 | 36·9 | 37·1 | 37·0 | 33·3 | 43·6 | 38·5 | 25·0 | 23rd | 52·0 | 25th |
| | Strathfield Turgiss 𝔐 | ·780 | 38·8 | 37·9 | 38·4 | 33·6 | 44·3 | 39·0 | 24·2 | 23rd | 52·1 | 24th, 25th |
| | Ramsgate 𝔐 | ·745 | 41·5 | 41·5 | 41·5 | 37·7 | 45·5 | 41·6 | 28·4 | 30th | 52·4 | 25th |
| | Folkestone | ·731 | 40·7 | 40·4 | 40·6 | 36·3 | 45·1 | 40·7 | 28·0 | 30th | 51·4 | 25th |
| | Southampton† | ·781 | 40·3 | 39·5 | 39·9 | 36·2 | 44·8 | 40·5 | 31·2 | 12th | 52·5 | 25th |
| | Hastings | ·744 | 40·2 | 40·2 | 40·2 | 36·5 | 44·6 | 40·6 | 30·6 | 29th, 30th | 51·8 | 25th |
| **6.** SCOTLAND, W. | — | — | — | — | — | — | — | — | — | — | — | — |
| **7.** ENGLAND, N.W. | Douglas | ·817 | 41·1 | 38·9 | 40·0 | 34·5 | 45·5 | 40·0 | 27·4 | 26th | 49·7 | 10th |
| | Prestwich | ·793 | 36·2 | 36·5 | 36·4 | 32·7 | 42·0 | 37·4 | 25·9 | 12th | 48·5 | 2nd, 18th |
| | Llandudno 𝔐 | ·824 | 41·9 | 41·4 | 41·7 | 37·2 | 45·9 | 41·6 | 30·8 | 22nd, 26th | 52·2 | 10th |
| **8.** ENGLAND, S.W. | Caermarthen 𝔐 | ·830 | 40·1 | 38·3 | 39·2 | 34·0 | 46·5 | 40·3 | 25·7 | 26th | 54·1 | 10th |
| | Dartmoor 𝔐 | ·823 | 35·3 | 35·8 | 35·6 | 32·4 | 40·4 | 36·4 | 26·9 | 29th | 48·6 | 24th |
| | Babbacombe 𝔐 | ·818 | 40·8 | 40·3 | 40·6 | 37·0 | 46·1 | 41·6 | 31·0 | 12th | 52·9 | 24th |
| **9.** IRELAND, N. | Markree Castle | ·927 | 37·9 | 37·4 | 37·7 | 32·0 | 44·6 | 38·3 | 23·3 | 28th | 51·2 | 9th |
| **10.** IRELAND, S. | Dublin | ·898 | 36·8 | 37·9 | 37·4 | 33·3 | 43·1 | 38·2 | 26·3 | 26th | 50·5 | 10th |
| | Parsonstown | ·941 | 35·4 | 35·8 | 35·6 | 29·5 | 44·5 | 37·0 | 21·0 | 29th | 52·7 | 10th |
| CHANNEL | Jersey (St. Aubin's) | 29·818 | 45·5 | 44·7 | 45·1 | 40·9 | 48·9 | 44·9 | 34·9 | 23rd | 55·2 | 4th |

NOTE.—The stations marked thus 𝔐 are in connexion with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

**STATIONS of the SECOND ORDER in the BRITISH ISLANDS, during the Month of NOVEMBER 1878.**
**corrected for Diurnal Range.**
**Latitude, beginning in each case with the Station lying furthest North.)**

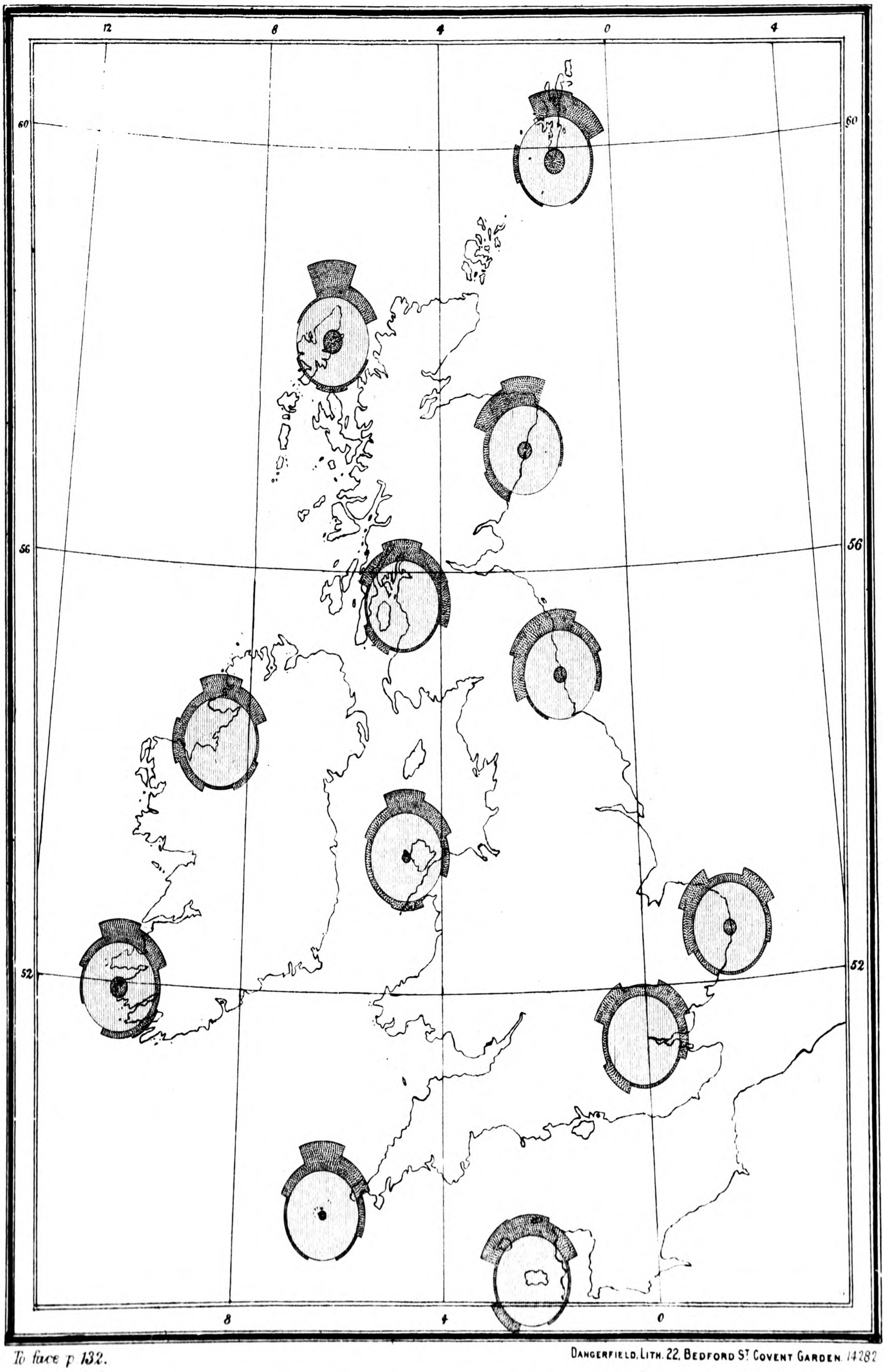
| TENSION OF VAPOUR. | | | RELATIVE HUMIDITY. | | | AMOUNT OF CLOUD (0 to 10). | | | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·206 | ·205 | ·206 | 90 | 88 | 89 | 5·1 | 7·3 | 6·2 | 3·610 | ·520 | 9th | 26 | 4 | 1 | 0 | 4 | 9 | 5 | 19 | 7 | 3 | 2 | 3 | 5 | 2 | 10 | 9 |
| ·180 | ·179 | ·180 | 81 | 82 | 81 | 6·8 | 6·0 | 6·4 | 2·309 | ·655 | 9th | 12 | 7 | 0 | 0 | 3 | 12 | 2 | 19 | 4 | 1 | 0 | 4 | 1 | 9 | 13 | 9 |
| ·220 | ·216 | ·218 | 91 | 90 | 91 | 6·9 | 5·7 | 6·3 | 5·752 | ·900 | 11th | 22 | 2 | 7 | 1 | 3 | 9 | 4 | 12 | 9 | 1 | 0 | 2 | 8 | 12 | 15 | 1 |
| ·208 | ·193 | ·201 | 88 | 89 | 89 | 6·9 | 6·4 | 6·7 | 7·414 | 1·560 | 15th | 23 | 5 | 1 | 1 | 1 | 9 | 0 | 11 | 6 | 0 | 0 | 7 | 7 | 4 | 24 | 1 |
| ·209 | ·202 | ·206 | 91 | 90 | 91 | 5·3 | 5·0 | 5·2 | 4·080 | ·680 | 15th | 23 | 3 | 0 | 0 | 7 | 6 | 2 | 17 | 7 | 0 | 0 | 2 | 5 | 7 | 18 | 4 |
| ·201 | ·199 | ·200 | 94 | 94 | 94 | 6·9 | 6·1 | 6·5 | 6·089 | 1·340 | 15th | 23 | 2 | 1 | 0 | 3 | 9 | 0 | 13 | 6 | 0 | 2 | 2 | 9 | 6 | 20 | 2 |
| ·222 | ·220 | ·221 | 91 | 95 | 92 | 8·1 | 7·9 | 8·0 | 7·588 | 1·540 | 14th | 23 | 1 | 2 | 0 | 0 | 15 | 4 | 7 | 14 | 2 | 2 | 3 | 7 | 5 | 19 | 1 |
| ·211 | ·212 | ·212 | 91 | 92 | 91 | 8·4 | 7·8 | 8·1 | 5·270 | 1·310 | 13th | 21 | 5 | 1 | 0 | 0 | 18 | 1 | 5 | 8 | 0 | 3 | 0 | 7 | 1 | 2 | 9 |
| ·215 | ·215 | ·215 | 90 | 90 | 90 | 8·2 | 7·7 | 8·0 | 3·670 | ·610 | 14th | 17 | 1 | 1 | 0 | 1 | 19 | 3 | 18 | 11 | 4 | 2 | 1 | 5 | 6 | 10 | 3 |
| ·196 | ·195 | ·196 | 86 | 87 | 87 | 6·8 | 6·8 | 6·8 | 2·290 | ·320 | 11th, 24th | 19 | 4 | 0 | 1 | 0 | 9 | 0 | 7 | 2 | 0 | 2 | 2 | 4 | 14 | 24 | 5 |
| ·177 | ·176 | ·177 | 85 | 86 | 85 | 7·0 | 7·9 | 7·5 | 4·600 | ·970 | 9th | 12 | 8 | 2 | 1 | 0 | 11 | 0 | 10 | 8 | 4 | 1 | 0 | 0 | 5 | 23 | 9 |
| ·186 | ·191 | ·188 | 92 | 94 | 93 | 6·5 | 5·6 | 6·0 | 2·370 | ·560 | 15th | 11 | 5 | 0 | 0 | 4 | 12 | 9 | 22 | 5 | 4 | 1 | 8 | 5 | 0 | 15 | 0 |
| ·197 | ·198 | ·198 | 87 | 86 | 87 | 9·5 | 7·9 | 8·7 | 3·250 | ·560 | 24th | 19 | 3 | 1 | 0 | 0 | 21 | 0 | 11 | 13 | 0 | 0 | 1 | 5 | 6 | 14 | 10 |
| ·199 | ·199 | ·199 | 91 | 91 | 91 | 8·3 | 7·3 | 7·8 | 3·544 | ·680 | 24th | 18 | 4 | 1 | 0 | 1 | 17 | 2 | 17 | 6 | 1 | 1 | 0 | 6 | 10 | 14 | 5 |
| ·195 | ·196 | ·196 | 92 | 92 | 92 | 8·2 | 7·1 | 7·7 | 2·840 | ·700 | 9th | 13 | 3 | 1 | 0 | 1 | 18 | 4 | 16 | 6 | 0 | 1 | 4 | 5 | 4 | 20 | 4 |
| ·192 | ·189 | ·191 | 91 | 89 | 90 | 7·1 | 7·3 | 7·2 | 4·129 | 1·180 | 9th | 21 | 7 | 0 | 0 | 0 | 11 | 1 | 23 | 4 | 0 | 2 | 3 | 3 | 9 | 16 | 0 |
| ·196 | ·190 | ·193 | 86 | 88 | 87 | 7·2 | 4·9 | 6·1 | 2·413 | ·523 | 9th | 18 | 2 | 0 | 0 | 2 | 9 | 0 | 14 | 8 | 1 | 0 | 0 | 1 | 4 | 7 | 25 |
| ·202 | ·203 | ·203 | 91 | 91 | 91 | 7·4 | 6·7 | 7·1 | 3·629 | ·800 | 10th | 16 | 7 | 0 | 0 | 4 | 17 | 0 | 10 | 2 | 0 | 0 | 0 | 3 | 8 | 6 | 31 |
| ·213 | ·211 | ·212 | 90 | 92 | 91 | 7·6 | 7·3 | 7·5 | 3·738 | ·819 | 10th | 16 | 1 | 1 | 0 | 2 | 16 | 0 | 11 | 8 | 2 | 2 | 1 | 4 | 8 | 18 | 6 |
| ·231 | ·233 | ·232 | 87 | 88 | 88 | 7·5 | 7·7 | 7·6 | 5·083 | 1·250 | 15th | 18 | 0 | 2 | 1 | 0 | 14 | 2 | 2 | 11 | 1 | 2 | 4 | 12 | 10 | 14 | 4 |
| ·224 | ·226 | ·225 | 88 | 90 | 89 | 7·7 | 7·7 | 7·7 | 5·170 | ·760 | 15th | 23 | 0 | 2 | 1 | 0 | 16 | 2 | 24 | 9 | 3 | 2 | 4 | 3 | 10 | 4 | 1 |
| ·209 | ·204 | ·207 | 83 | 84 | 83 | 7·9 | 7·2 | 7·6 | 2·520 | ·545 | 10th | 16 | 1 | 0 | 0 | 2 | 16 | 1 | 11 | 17 | 0 | 4 | 0 | 5 | 2 | 20 | 1 |
| ·219 | ·224 | ·222 | 87 | 90 | 89 | 7·6 | 7·1 | 7·4 | 4·040 | ·570 | 13th | 21 | 1 | 1 | 0 | 3 | 17 | 3 | 19 | 16 | 2 | 0 | 4 | 3 | 9 | 5 | 2 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·223 | ·215 | ·219 | 86 | 90 | 88 | 6·0 | 5·0 | 5·5 | 2·603 | ·710 | 9th | 19 | 2 | 4 | 0 | 7 | 9 | 2 | 24 | 3 | 1 | 1 | 1 | 1 | 4 | 6 | 19 |
| ·189 | ·192 | ·191 | 88 | 89 | 89 | 6·2 | 6·5 | 6·4 | 2·449 | ·720 | 9th | 13 | 5 | 2 | 1 | 2 | 11 | 0 | 21 | 4 | 0 | 0 | 4 | 4 | 4 | 9 | 14 |
| ·212 | ·208 | ·210 | 80 | 80 | 80 | 6·6 | 6·5 | 6·6 | 3·320 | ·822 | 9th | 16 | 4 | 4 | 0 | 0 | 11 | 8 | 18 | 8 | 5 | 2 | 8 | 3 | 11 | 5 | 0 |
| ·222 | ·219 | ·221 | 89 | 94 | 92 | 5·0 | 5·2 | 5·1 | 4·680 | 1·420 | 9th | 19 | 2 | 1 | 1 | 8 | 6 | 0 | 17 | 2 | 6 | 0 | 0 | 2 | 3 | 8 | 22 |
| ·190 | ·195 | ·193 | 92 | 92 | 92 | 6·9 | 6·0 | 6·5 | 6·500 | 1·310 | 10th | 21 | 8 | 2 | 0 | 4 | 11 | 4 | 16 | 15 | 1 | 4 | 1 | 4 | 1 | 10 | 8 |
| ·221 | ·216 | ·219 | 86 | 86 | 86 | 7·3 | 5·6 | 6·5 | 3·260 | ·520 | 10th | 17 | 3 | 3 | 0 | 3 | 13 | 3 | 22 | 11 | 3 | 2 | 0 | 4 | 9 | 9 | 0 |
| ·205 | ·200 | ·203 | 88 | 89 | 89 | 7·3 | 5·7 | 6·5 | 3·551 | ·579 | 12th | 24 | 4 | 4 | 0 | 2 | 10 | 0 | 14 | 1 | 1 | 1 | 0 | 4 | 1 | 8 | 30 |
| ·193 | ·203 | ·198 | 88 | 88 | 88 | 5·0 | 5·0 | 5·0 | 1·338 | ·556 | 9th | 11 | 3 | 3 | 1 | 6 | 5 | 1 | 10 | 2 | 0 | 0 | 1 | 2 | 19 | 21 | 5 |
| ·190 | ·201 | ·196 | 90 | 94 | 92 | 5·1 | 4·3 | 4·7 | 1·760 | ·708 | 9th | 14 | 3 | 2 | 0 | 9 | 6 | 0 | 6 | 1 | 0 | 1 | 2 | 4 | 7 | 15 | 24 |
| ·246 | ·242 | ·244 | 81 | 83 | 81 | 8·2 | 8·0 | 8·1 | 8·137 | 1·154 | 13th | 25 | 0 | 11 | 3 | 1 | 17 | 2 | 14 | 18 | 2 | 1 | 2 | 5 | 3 | 9 | 6 |

TABLE C., NOVEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS during the Month of NOVEMBER 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| Names of Districts. | Names of Stations. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | Air Temperature. | | | | | | | | Tension of Vapour. | Relative Humidity. | Amount of Cloud. | Rainfall. | | | Weather. No. of Days of | | | | | | | Wind. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | At 8 a.m. | Means of | | | Absolute Extremes. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. | | | | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | ins. | ° | ° | ° | ° | ° | | ° | | ins. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| 0. SCOTLAND, N. | Sumburgh Head | 29·769 | 38·5 | 34·7 | 42·5 | 38·6 | 26 | 24th | 49 | 19th | 0·198 | 86 | 6·5 | 3·79 | 1·67 | 10th | 23 | 3 | 0 | 0 | 5 | 13 | 3 | 11 | 9 | 1 | 1 | 0 | 1 | 2 | 0 | 5 |
| | Thurso | 29·819 | 39·2 | 35·1 | 44·6 | 39·9 | 25 | 24th | 50 | 19th | ·228 | 95 | 6·7 | 3·48 | 0·43 | 9th | 25 | 5 | 1 | 0 | 4 | 11 | 5 | 7 | 2 | 1 | 4 | 5 | 1 | 1 | 7 | 2 |
| | Wick | 29·798 | 37·7 | 32·5 | 43·9 | 38·2 | 23 | 24th | 50 | 20th | ·200 | 89 | 6·2 | 2·79 | 0·57 | 12th | 21 | 2 | 0 | 1 | 9 | 14 | 5 | 6 | 4 | 1 | 0 | 4 | 2 | 1 | 11 | 1 |
| | Stornoway | 29·833 | 38·7 | 34·7 | 42·6 | 38·7 | 29 | 28th | 50 | 20th | ·217 | 92 | 5·3 | 3·19 | 0·53 | 9th | 21 | 2 | 1 | 0 | 9 | 6 | 8 | 16 | 5 | 0 | 1 | 2 | 1 | 0 | 1 | 4 |
| 1. SCOTLAND, E. | Nairn | 29·824 | 38·2 | 35·1 | 41·9 | 38·5 | 27 | 27th, 28th | 50 | 20th | ·197 | 85 | 5·7 | 2·54 | 0·70 | 24th | 19 | 4 | 0 | 1 | 9 | 9 | 6 | 2 | 5 | 1 | 1 | 0 | 1 | 3 | 8 | 9 |
| | Aberdeen | 29·777 | 38·1 | 35·3 | 43·3 | 39·3 | 27 | 29th | 50 | 21st | ·194 | 84 | 5·6 | 3·84 | 0·66 | 24th | 24 | 3 | 3 | 0 | 7 | 7 | 3 | 12 | 1 | 1 | 0 | 0 | 4 | 2 | 8 | 2 |
| | Leith | 29·787 | 38·4 | 34·2 | 45·6 | 39·9 | 28 | 29th | 52 | 1st, 17th | ·208 | 91 | 6·8 | 2·73 | 1·07 | 25th | 15 | 2 | 1 | 0 | 1 | 9 | 1 | 4 | 5 | 2 | 0 | 0 | 2 | 9 | 6 | 2 |
| 2. ENGLAND, N.E. | Shields | 29·760 | 39·1 | 35·7 | 44·1 | 39·9 | 29 | 12th | 49 | 10th | ·208 | 87 | 7·3 | 5·47 | 1·25 | 26th | 23 | 5 | 8 | 1 | 4 | 17 | 11 | 8 | 4 | 2 | 0 | 0 | 1 | 5 | 8 | 2 |
| | Scarborough | 29·733 | 40·1 | 36·8 | 43·9 | 40·4 | 28 | 12th | 49 | 1st | ·223 | 90 | 6·9 | 5·13 | 0·96 | 15th | 20 | 3 | 4 | 0 | 3 | 11 | 7 | 10 | 4 | 1 | 0 | 0 | 4 | 6 | 4 | 1 |
| | York | 29·757 | 36·5 | 32·6 | 42·6 | 37·6 | 26 | 12th | 50 | 1st | ·197 | 91 | 5·9 | 4·09 | 0·59 | 15th | 23 | 3 | 0 | 0 | 6 | 11 | 2 | 16 | 1 | 0 | 0 | 5 | 2 | 1 | 5 | 0 |
| 3. ENGLAND, E. | Yarmouth | 29·695 | 41·3 | 37·6 | 45·0 | 41·3 | 31 | 12th, 13th, 30th. | 52 | 25th | ·245 | 95 | 7·9 | 8·20 | 1·44 | 15th | 23 | 0 | 3 | 0 | 2 | 18 | 5 | 3 | 6 | 2 | 1 | 1 | 2 | 5 | 8 | 2 |
| | Cambridge | 29·748 | 37·6 | 33·1 | 45·1 | 39·1 | 23 | 30th | 52 | 2nd, 25th | ·213 | 94 | 8·0 | 4·48 | 0·95 | 15th | 21 | 1 | 0 | 0 | 3 | 20 | 0 | 12 | 0 | 1 | 0 | 1 | 3 | 1 | 11 | 1 |
| 4. MIDLAND COUNTIES. | Nottingham | 29·775 | 37·0 | 32·4 | 43·6 | 38·0 | 25 | 27th | 54 | 9th | ·198 | 90 | 7·8 | 2·36 | 0·47 | 24th | 16 | 4 | 0 | 1 | 4 | 17 | 4 | 8 | 2 | 0 | 0 | 1 | 4 | 1 | 6 | 8 |
| | Oxford | 29·773 | 37·8 | 34·1 | 44·3 | 39·2 | 28 | 13th | 52 | 10th, 18th, 24th. | ·201 | 89 | 7·2 | 2·10 | 0·42 | 27th | 16 | 0 | 0 | 0 | 8 | 18 | 0 | 14 | 1 | 0 | 0 | 1 | 2 | 3 | 4 | 5 |
| 5. ENGLAND, S. | London | 29·752 | 39·1 | 35·2 | 45·3 | 40·3 | 28 | 30th | 53 | 25th | ·206 | 86 | 7·2 | 3·47 | 0·78 | 27th | 20 | 1 | 0 | 0 | 5 | 16 | 4 | 4 | 7 | 4 | 1 | 1 | 4 | 2 | 7 | 0 |
| | Dover | 29·720 | 40·9 | 37·7 | 45·6 | 41·7 | 32 | 30th | 52 | 25th | ·224 | 88 | 5·8 | 5·20 | 0·86 | 15th | 20 | 0 | 2 | 3 | 5 | 8 | 2 | 7 | 6 | 1 | 1 | 1 | 3 | 4 | 7 | 0 |
| | Hurst Castle | 29·759 | 41·4 | 35·9 | 46·1 | 41·0 | 31 | 29th, 30th | 54 | 24th | ·227 | 88 | 6·9 | 2·01 | 0·33 | 10th | 15 | 2 | 1 | 0 | 5 | 10 | 1 | 8 | 9 | 1 | 1 | 1 | 1 | 3 | 6 | 0 |
| 6. SCOTLAND, W. | Ardrossan | 29·819 | 38·9 | 35·3 | 46·2 | 40·8 | 27 | 28th | 50 | 4th, 5th, 6th, 9th, 10th, 19th, 20th, 21st. | ·193 | 82 | 5·2 | 1·45 | 0·53 | 9th | 12 | 0 | 0 | 0 | 11 | 9 | 4 | 8 | 6 | 5 | 1 | 1 | 3 | 1 | 5 | 0 |
| 7. ENGLAND, N.W. | Liverpool | 29·802 | 38·5 | 36·2 | 43·3 | 39·8 | 29 | 20th | 50 | 9th | ·200 | 86 | 5·7 | 1·57 | 0·47 | 9th | 13 | 0 | 0 | 0 | 10 | 10 | 0 | 9 | 2 | 1 | 6 | 1 | 1 | 2 | 7 | 1 |
| | Holyhead | 29·822 | 43·1 | 40·4 | 47·2 | 43·8 | 34 | 12th, 26th | 52 | 9th | ·225 | 81 | 5·7 | 3·10 | 1·03 | 9th | 19 | 0 | 2 | 0 | 7 | 6 | 5 | 9 | 6 | 3 | 0 | 3 | 2 | 2 | 4 | 1 |
| 8. ENGLAND, S.W. | Pembroke | 29·833 | 41·4 | 37·8 | 45·9 | 41·9 | 29 | 21st | 53 | 9th | ·223 | 86 | 6·9 | 5·01 | 0·99 | 9th | 22 | 0 | 2 | 0 | 4 | 14 | 6 | 7 | 11 | 3 | 1 | 0 | 0 | 0 | 8 | 0 |
| | Plymouth | 29·816 | 38·9 | 35·2 | 46·9 | 41·1 | 30 | 21st, 22nd | 54 | 10th, 24th | ·213 | 91 | 5·8 | 2·44 | 0·62 | 10th | 19 | 1 | 0 | 0 | 10 | 15 | 3 | 10 | 3 | 2 | 0 | 1 | 1 | 2 | 10 | 1 |
| 9. IRELAND, N. | Greencastle | 29·861 | 40·5 | 36·4 | 45·4 | 40·9 | 30 | 26th, 29th | 50 | 2nd, 17th | ·216 | 87 | 8·6 | 5·96 | 1·02 | 26th | 25 | 3 | 1 | 0 | 3 | 25 | 0 | 10 | 4 | 2 | 2 | 3 | 3 | 3 | 3 | 0 |
| | Donaghadee | 29·859 | 39·8 | 36·3 | 44·5 | 40·4 | 27 | 26th | 49 | 6th | ·219 | 90 | 4·0 | 2·77 | 0·80 | 11th | 19 | 1 | 0 | 0 | 12 | 4 | 6 | 10 | 5 | 1 | 0 | 0 | 4 | 8 | 2 | 0 |
| | Mullaghmore | 29·904 | 42·0 | 37·9 | 46·1 | 42·0 | 28 | 26th | 51 | 9th | ·241 | 91 | 7·7 | 3·00 | 0·67 | 9th | 21 | 3 | 5 | 0 | 3 | 13 | 6 | 9 | 6 | 1 | 2 | 1 | 3 | 5 | 3 | 0 |
| 10. IRELAND, S. | Kingstown | 29·879 | 38·7 | 35·2 | 44·3 | 39·8 | 28 | 12th, 13th | 52 | 9th | ·200 | 85 | 4·9 | 0·86 | 0·41 | 9th | 12 | 0 | 1 | 0 | 6 | 5 | 6 | 1 | 1 | 1 | 0 | 1 | 0 | 15 | 10 | 1 |
| | Valencia | 29·967 | 42·4 | 37·2 | 49·3 | 43·3 | 32 | 12th, 25th, 26th, 28th. | 54 | 4th, 9th | ·221 | 82 | 6·5 | 3·45 | 1·05 | 9th | 22 | 1 | 4 | 0 | 1 | 7 | 3 | 9 | 7 | 2 | 3 | 2 | 0 | 1 | 3 | 3 |
| | Roche's Point | 29·927 | 40·3 | 36·5 | 46·5 | 41·5 | 30 | 12th | 52 | 9th | ·199 | 80 | 4·3 | 2·26 | 0·92 | 9th | 9 | 1 | 0 | 0 | 12 | 6 | 5 | 14 | 5 | 2 | 0 | 1 | 0 | 3 | 5 | 0 |
| CHANNEL ISLANDS | Scilly (St. Mary's) | 29·857 | 46·9 | 43·2 | 49·1 | 46·2 | 32 | 13th | 54 | 10th, 24th | ·267 | 84 | 8·0 | 4·11 | 0·83 | 28th | 22 | 1 | 6 | 2 | 0 | 12 | 10 | 12 | 7 | 3 | 1 | 0 | 1 | 1 | 4 | 1 |
| | Jersey (Noirmont) | 29·750 | 44·5 | 41·2 | 48·3 | 44·8 | 35 | 24th | 54 | 10th, 11th, 24th. | ·257 | 87 | 7·7 | 8·03 | 1·12 | 13th | 25 | 0 | 8 | 3 | 0 | 14 | 4 | 8 | 6 | 1 | 1 | 0 | 4 | 1 | 9 | 0 |

# MONTHLY WIND CHART FOR NOVEMBER 1878.

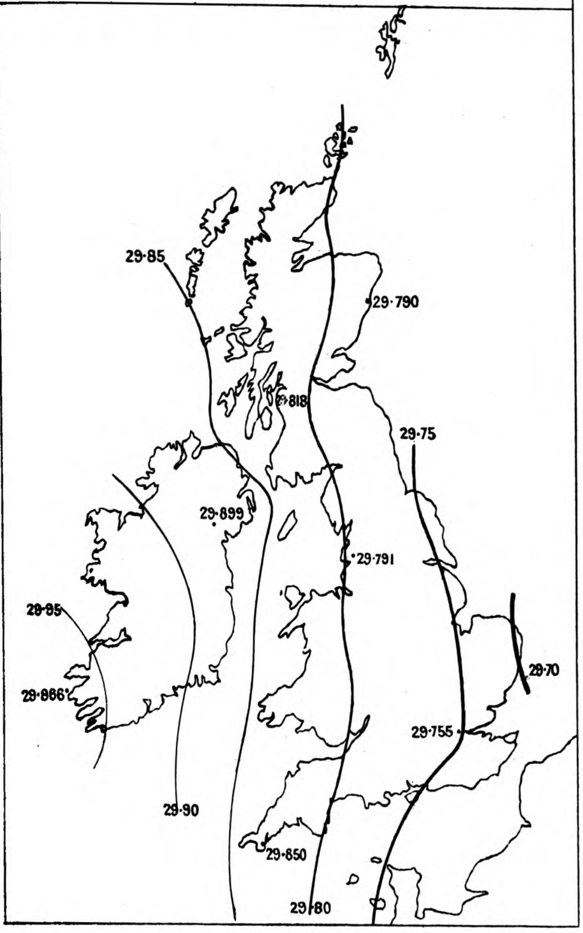

12
8
4
0
4
60
60
56
56
52
52
8
4
0

To face p 132.

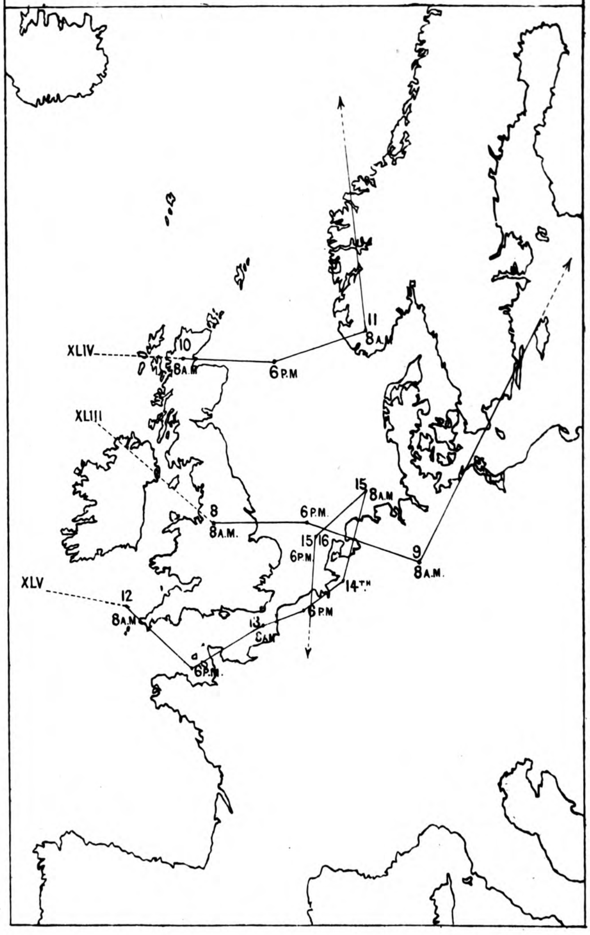
DANGERFIELD, LITH. 22, BEDFORD S^T COVENT GARDEN. 14282

# MONTHLY WEATHER CHART. NOVEMBER 1878.

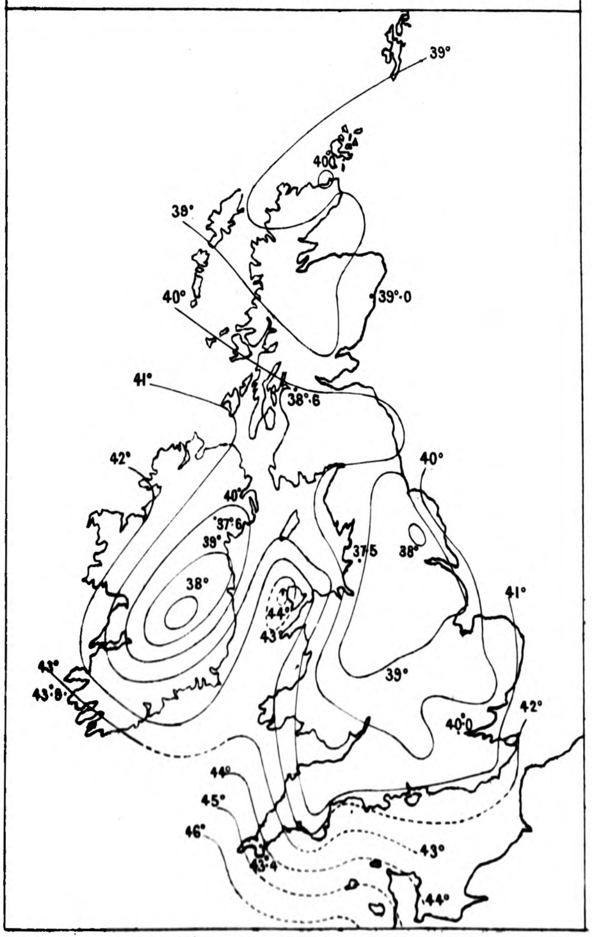
## 1. DISTRIBUTION OF MEAN PRESSURE


29·85
29·790
29·818
29·75
29·899
29·791
29·95
29·866
29·70
29·755
29·90
29·850
29·80

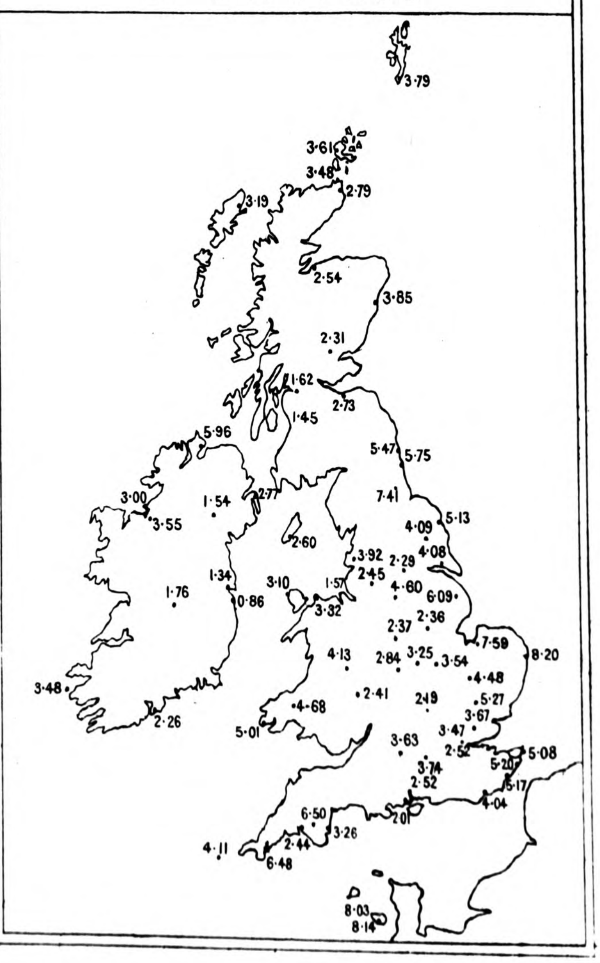
## 2. MOVEMENTS OF DEPRESSIONS.


XLIV
10
8A.M
6P.M
11
8A.M
XLIII
8
8A.M.
6P.M.
15
8A.M
15
16
6P.M.
9
8A.M.
XLV
12
8A.M
14TH
6P.M
13
8A.M
6P.M.

## 3. DISTRIBUTION OF MEAN TEMPERATURE


39°
40°
38°
39°·0
40°
41°
38°·6
42°
40°
40°
37°·6
39°
37·5
38°
38°
44°
43°
41°
39°
43°
43°·8
40°·0
42°
44°
45°
46°
43°
43°·4
44°

## 4. RAINFALL


3·79
3·61
3·48
2·79
3·19
2·54
3·85
2·31
1·62
2·73
1·45
5·96
5·47
5·75
3·00
1·54
2·77
7·41
3·55
5·13
4·09
4·08
2·60
3·92
2·29
1·34
3·10
1·57
2·45
1·76
0·86
3·32
4·60
6·09
2·36
2·37
7·59
4·13
2·84
3·25
3·54
8·20
3·48
4·48
2·41
2·19
5·27
4·68
3·67
2·26
5·01
3·47
3·63
2·52
5·08
3·74
5·20
2·52
5·17
4·04
6·50
2·01
3·26
4·11
2·44
6·48
8·03
8·14

*To follow Wind Chart for November.*

Dangerfield. Lith. 22, Bedford St. Covent Garden. 14283.

## Remarks for December 1878.

*(Tables A. to C., December, with Monthly Wind and Weather Charts.)*

*Wind.*—The winds experienced were chiefly Northerly (North-east—North-west) at the northern stations, and Westerly over the east of England; but at the western stations they were much more uniformly distributed round the compass, the smallest percentages being for South and South-east winds. Gales were not very frequent and were sometimes local, the most severe and general being those felt quite at the close of the month. During the first week anticyclonic conditions prevailed, and the winds were as a rule Northerly, and light or moderate in force; the exceptions to this rule being that on the 3rd they veered temporarily to the Eastward, but soon backed again, and that on the 7th the force increased to a gale at Scilly. On the 10th both the direction and force became more variable, and continued so for a few days. A Southerly wind set in in the South-west on the 13th, and, after backing to the Eastward, spread over the Channel and southern England; but by the 17th a light or moderate Northerly wind had again become general and continued to blow for several days, with only a few temporary changes in direction and force. An area of high pressure lay over England on the 24th, with which an Easterly wind sprang up in the Channel and a South-westerly to Westerly wind in Scotland; by the following day the Easterly wind had spread northwards, and had increased a good deal in strength, but after a few hours it veered to the South-westward and moderated generally. Calms and light airs, chiefly from South-west and West, then ensued for a time; on the 28th they freshened somewhat and then backed to South and South-east, remaining, however, moderate in force. At the close of the 29th, however, a decided increase in strength took place, followed by a veering of the wind to the Westward, and throughout the two last days of the month a gale blew from that quarter in nearly all parts of the kingdom.

*Pressure.*—The mean pressure for the month was decidedly low, especially in the south of England; but the values were very uniform all over the kingdom, and there was but 0·15 inch difference between the highest and the lowest, in the south-west of Ireland and the north of Scotland respectively. The extreme range of the mercury was considerable, especially in the north and west, amounting to 1·7 inch in the north of Scotland and to 1·5 inch in Ireland, while in the south-west of England it was but 1·1 inch. Except at Kew the maximum readings occurred quite early in the month; at the station named the highest point was not reached till the 24th, but at both periods an anticyclone lay over the kingdom. The minimum readings were recorded at Stonyhurst and Kew on the 18th and 19th with depression No. XLVIII.; at Falmouth, however, the lowest point was not attained till the 28th, and at the remaining observatories not until still later, in connexion with the series of depressions which influenced our weather during the closing days of the month.

*Movements of the Depressions.*—Upon the whole the month was a tolerably quiet one, and depressions were neither numerous nor severe till quite its close. One system which was observed near the Baltic merely skirted the area with which these remarks deal, and another (No. XLVII.) only affected the south-western portion of the kingdom. Only one system (No. XLVIII.) fairly crossed Great Britain, and it pursued an easterly course from Scotland to the Baltic and Russia. During the closing days of the month a series of depressions skirted our western littoral, but their centres were almost without exception too far to the westward to admit of any detailed account of their characteristics being given. An area of high pressure was observed during the first week of the month, and another for a day or two about the 24th.

*Temperature.*—The mean temperature was everywhere very low, but it was especially so over central and eastern England, central Ireland, and eastern Scotland. Omitting the insular stations at the mouth of the Channel, the mean values decreased from about 40° over western Cornwall, to 31° or 32° over the districts just named. The range of temperature was very large, amounting to 53° at Nottingham, and to between 40° and 50° at many stations. This was due to the very low minima recorded, in most instances about the 25th, but in many cases 10 or 12 days earlier; at Buxton the temperature fell to 2°·5, at Durham to 3°, and at Markree to 5°·3. The maxima, on the other hand, were rather high, and occurred nearly everywhere at the close of the month.

*Vapour Tension.*—This was highest in the south-west and west, but much lower, and fairly uniform, over the greater part of England and Scotland; the mean values ranged from ·24 inch at Scilly and ·20 inch at Valencia to ·14 inch and ·16 inch over central and northern England and over Scotland. *Relative Humidity* values were pretty uniform over the greater part of England and Ireland; they were lowest at the coast stations in the west and south-west, and over Scotland.

*Rainfall.*—The fall of rain was nowhere large, and in most districts it did not amount to quite the average for the month. The heaviest daily falls occurred generally with the unsettled weather experienced at the close of the month, but it was only at a few Western stations that these reached, or even approximated to, as much as an inch in 24 hours.

TABLE A., DECEMBER.—SHOWING the MEAN and EXTREME PRESSURES and TEMPERATURES recorded at each of the SEVEN SELF-RECORDING OBSERVATORIES of the METEOROLOGICAL OFFICE during the Month of DECEMBER 1878; together with the MONTHLY VAPOUR TENSION, the RELATIVE HUMIDITY, and TOTAL RAINFALL.

| NAMES OF OBSERVATORIES. | PRESSURE at 32° F. and the Mean Sea Level (In English Inches). | | | | | | TEMPERATURE In the Shade (In Degrees Fahrenheit). | | | | | | HYGROMETRIC VALUES. | | RAINFALL (In English Inches). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean for the Month. | Extremes. | | | | Range. | Mean for the Month. | Extremes. | | | | Range. | Tension of Vapour (In English Inches). | Relative Humidity (Saturation = 100). | |
| | | Minimum. | | Maximum. | | | | Minimum. | | Maximum. | | | | | |
| | | Reading. | Date. | Reading. | Date. | | | Reading. | Date. | Reading. | Date. | | | | |
| Valencia - - | ins.<br>29·775* | ins.<br>28·917 | D. H.<br>29th, 9 p.m. | ins.<br>30·437 | D. H.<br>4th, 11 a.m. | ins.<br>1·520 | °<br>39·3 | °<br>27·4 | D. H.<br>14th, 7 p.m. | °<br>53·5 | D. H.<br>29th, 11 p.m. | °<br>26·1 | in.<br>·209 | %<br>88 | ins.<br>4·276 |
| Armagh - - | ·750 | ·932 | 30th, 2 a.m. | ·418 | 4th, 9 a.m. | 1·486 | 31·0 | 6·8 | 25th, 2 a.m. | 49·1 | 31st, 2 a.m. | 42·3 | ·153 | 87 | 1·839 |
| Glasgow - - | ·680 | ·806 | 31st, 5 p.m. | ·377 | 4th, 1 a.m. | 1·571 | 31·2† | 11·9‡ | 20th, ? | 47·9 | 31st, 6 a.m. | 36·0 | ·141 | 80 | 1·885 |
| Aberdeen - - | ·650 | 28·669 | 31st, 7 p.m. | ·364 | 3rd, 7 p.m.<br>8 p.m. | 1·695 | 32·1 | 16·3 | 13th, 7 p.m. | 45·6 | 31st, 6 p.m. | 29·3 | ·159 | 87 | 4·855 |
| Falmouth - - | ·762 | 29·282 | 28th, 7 p.m. | ·391 | 4th, 11 a.m. | 1·109 | 39·4 | 24·0 | 11th, 9 a.m. | 53·4 | 30th, 5 a.m. | 29·4 | ·205 | 85 | 6·23 |
| Stonyhurst - - | ·701 | 28·981 | 18th, 6 p.m. | ·373 | 4th, 3 a.m. | 1·392 | 30·8 | 13·0 | 25th, 4 a.m.<br>6 a.m. | 49·3 | 31st, 2 p.m. | 36·3 | ·138 | 80 | 1·874 |
| Kew - - | 29·727 | 29·159 | 19th, 6 a.m. | 30·387 | 24th, 8 p.m. | 1·228 | 33·9 | 14·7 | 24th, 10 p.m. | 53·6 | 30th, Noon | 38·9 | ·175 | 89 | 1·265 |

* Mean for one day is approximate

† Means for five days are approximate.

‡ Corrected reading of Rutherford's Minimum Thermometer.

## TABLE B., DECEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at

The values are not

(The Stations are grouped in Districts, and then arranged in order of

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 9 a.m. and 9 p.m. | AIR TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Means of | | | Absolute Extremes. | | | |
| | | | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Minima. | Maxima. | Min. and Max. combined. | Minimum. | Date. | Maximum. | Date. |
| | | ins. | ° | ° | ° | ° | ° | ° | ° | | ° | |
| 0. SCOTLAND, N. | Sandwick Manse (Orkneys) | 29·644 | 33·6 | 33·6 | 33·6 | 29·8 | 38·0 | 33·9 | 22·3 | 28th | 45·2 | 4th |
| 1. SCOTLAND, E. | Glenalmond | ·687 | 30·5 | 31·4 | 31·0 | 25·6 | 36·0 | 30·8 | 12·5 | 14th | 45·0 | 31st |
| 2. ENGLAND, E. | Seaham | ·657 | 31·7 | 32·3 | 32·0 | 27·1 | 36·9 | 32·0 | 13·3 | 14th | 50·2 | 31st |
| | Durham* | ·660 | 30·4 | 29·5 | 30·0 | 24·6 | 35·4 | 30·0 | 3·0 | 14th | 50·2 | 31st |
| | Hull | ·695 | 30·3 | 30·7 | 30·5 | 26·2 | 35·8 | 31·0 | 13·0 | 25th | 50·0 | 31st |
| | Kelstern 𝔐 | ·703 | 28·1 | 28·4 | 28·3 | 23·5 | 34·4 | 29·0 | 11·8 | 14th | 50·8 | 31st |
| 3. ENGLAND, E. | Hillington 𝔐 | ·693 | 31·4 | 29·4 | 30·4 | 24·6 | 35·9 | 30·3 | 6·9 | 25th | 53·4 | 31st |
| | Audley End 𝔐 | ·689 | 31·9 | 32·4 | 32·2 | 27·4 | 36·6 | 32·0 | 10·0 | 25th | 54·1 | 30th |
| | Chigwell Row | ·752 | 33·0 | 33·2 | 33·1 | 29·3 | 37·2 | 33·3 | 13·0 | 25th | 53·4 | 30th |
| 4. MIDLAND COUNTIES. | Wakefield 𝔐 | ·694 | 31·8 | 32·1 | 32·0 | 27·2 | 36·8 | 32·0 | 10·8 | 25th | 52·8 | 31st |
| | Buxton 𝔐 | ·736 | 30·1 | 29·4 | 29·8 | — | 35·0 | — | 2·5 | 24th | 48·5 | 31st |
| | Cheadle 𝔐 | ·717 | 29·4 | 30·4 | 29·9 | 26·3 | 34·5 | 30·4 | 16·9 | 14th | 50·1 | 31st |
| | Leicester | ·717 | 31·7 | 32·3 | 32·0 | 27·2 | 36·3 | 31·8 | 6·9 | 25th | 52·5 | 31st |
| | Uppingham | ·712 | 30·8 | 30·7 | 30·8 | 27·3 | 35·5 | 31·4 | 17·9 | 25th | 51·6 | 31st |
| | Oscott | ·725 | 29·9 | 30·2 | 30·1 | 26·1 | 35·1 | 30·6 | 12·7 | 25th | 51·1 | 30th |
| | Churchstoke 𝔐 | ·771 | 30·8 | 31·5 | 31·2 | 25·5 | 36·7 | 31·1 | 12·2 | 24th, 25th | 51·1 | 30th, 31st |
| | Hereford 𝔐 | ·732 | 31·0 | 31·4 | 31·2 | 26·1 | 37·5 | 31·8 | 4·8 | 25th | 53·1 | 31st |
| 5. ENGLAND, S. | Marlborough 𝔐 | ·756 | 31·4 | 31·4 | 31·4 | 27·5 | 37·9 | 32·7 | 14·0 | 25th | 53·7 | 31st |
| | Strathfield Turgiss 𝔐 | ·743 | 32·7 | 31·9 | 32·3 | 26·5 | 37·9 | 32·2 | 8·2 | 25th | 55·1 | 30th |
| | Ramsgate 𝔐 | ·744 | 35·2 | 34·9 | 35·1 | 30·5 | 39·0 | 34·8 | 19·1 | 25th | 53·7 | 30th |
| | Folkestone | ·731 | 34·4 | 34·6 | 34·5 | 30·0 | 38·6 | 34·3 | 20·1 | 15th | 49·6 | 31st |
| | Southampton† | ·746 | 34·5 | 34·8 | 34·7 | 30·3 | 39·4 | 34·9 | 22·2 | 15th | 52·4 | 31st |
| | Hastings | ·742 | 34·6 | 35·2 | 34·9 | 31·2 | 38·3 | 34·8 | 21·2 | 15th | 49·6 | 31st |
| 6. SCOTLAND, W. | - - - - - | — | — | — | — | — | — | — | — | — | — | — |
| 7. ENGLAND, N.W. | Douglas | ·696 | 34·2 | 34·3 | 34·3 | 29·1 | 39·8 | 34·5 | 12·8 | 24th | 49·9 | 31st |
| | Prestwich | ·714 | 29·0 | 29·6 | 29·3 | 24·6 | 34·9 | 29·8 | 7·0 | 24th | 51·5 | 31st |
| | Llandudno 𝔐 | ·719 | 35·6 | 35·6 | 35·6 | 31·2 | 40·4 | 35·8 | 20·7 | 13th | 53·0 | 31st |
| 8. ENGLAND, S.W. | Caermarthen 𝔐 | ·741 | 32·0 | 32·1 | 32·1 | 25·7 | 39·6 | 32·7 | 11·6 | 12th | 54·7 | 31st |
| | Dartmoor 𝔐 | ·754 | 31·3 | 31·6 | 31·5 | 27·2 | 37·0 | 32·1 | 15·0 | 10th | 48·8 | 30th |
| | Babbacombe 𝔐 | ·756 | 35·8 | 36·0 | 35·9 | 31·4 | 41·9 | 36·7 | 20·6 | 11th, 15th | 52·8 | 30th |
| 9. IRELAND, N. | Markree Castle | ·763 | 28·8 | 29·3 | 29·1 | 22·5 | 37·6 | 30·1 | 5·3 | 17th, 25th | 51·0 | 31st |
| 10. IRELAND, S. | Dublin | ·755 | 31·9 | 33·0 | 32·5 | 28·4 | 37·2 | 32·8 | 14·0 | 24th | 52·5 | 30th |
| | Parsonstown | ·782 | 29·3 | 29·2 | 29·3 | 23·7 | 36·8 | 30·3 | 7·7 | 24th | 52·8 | 30th |
| CHANNEL | Jersey (St. Aubin's) | 29·795 | 40·2 | 40·1 | 40·2 | 36·1 | 44·7 | 40·4 | 27·5 | 11th | 54·6 | 30th |

NOTE.—The stations marked thus 𝔐 are in connexion with the Royal Meteorological Society.

* At Durham the observations were taken at 10 a.m. and 10 p.m. each day.

† At Southampton the observations were taken at 9.30 a.m. and 9.30 p.m. each day.

STATIONS of the SECOND ORDER in the BRITISH ISLANDS during the Month of DECEMBER 1878. corrected for Diurnal Range.

Latitude, beginning in each case with the Station lying furthest North.)

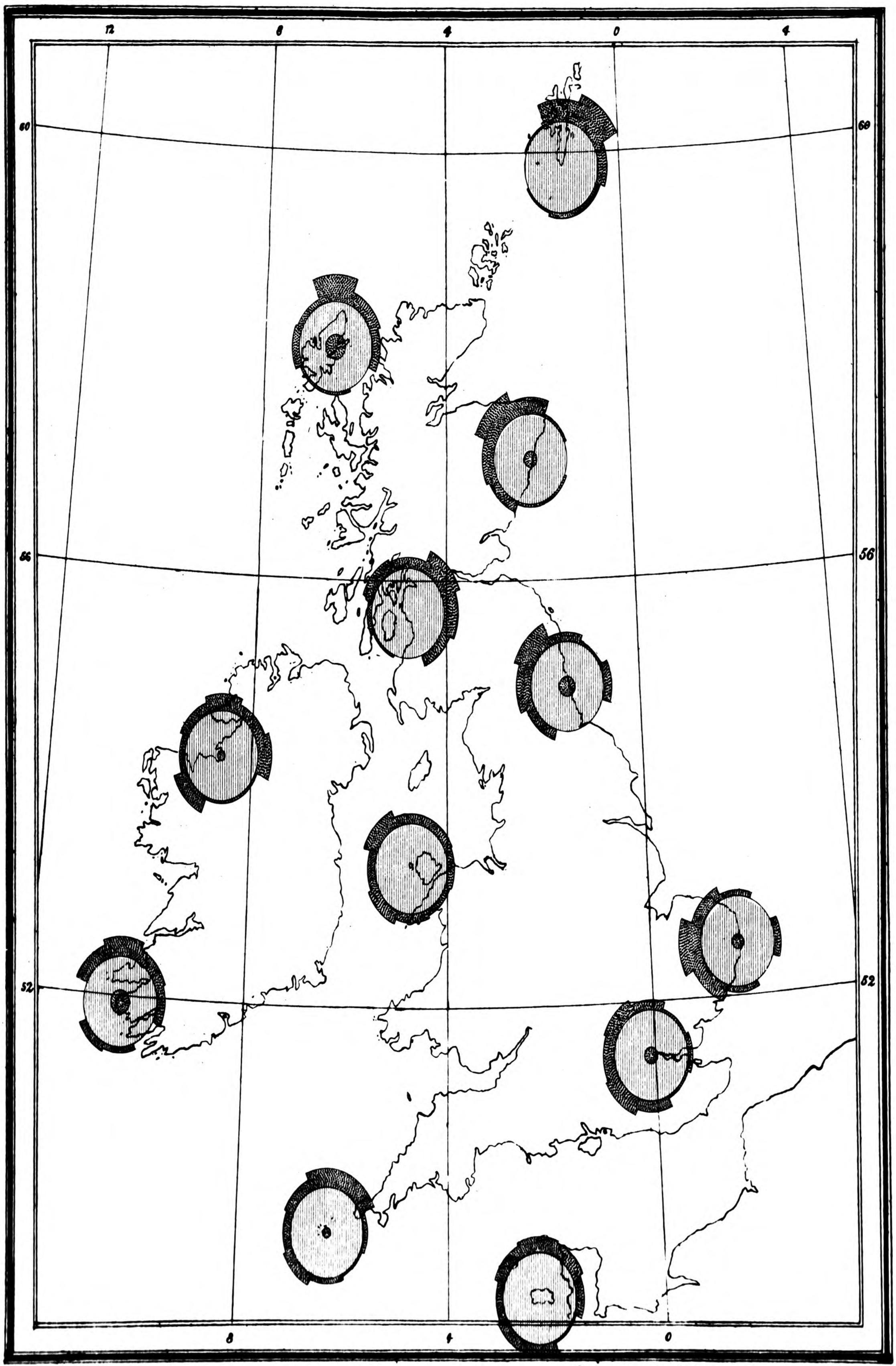
| TENSION OF VAPOUR. | | | RELATIVE HUMIDITY. | | | AMOUNT OF CLOUD (0 to 10). | | | RAINFALL. | | | WEATHER, No. of Days of | | | | | | | WIND, No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | At 9 a.m. | At 9 p.m. | Mean of 9 a.m. and 9 p.m. | Total Fall in the Month. | Maximum Fall in One Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| in. | in. | in. | % | % | % | | | | ins. | ins. | | | | | | | | | | | | | | | | | |
| ·179 | ·176 | ·178 | 92 | 91 | 92 | 6·0 | 5·5 | 5·8 | 5·700 | ·620 | 28th | 28 | 10 | 2 | 1 | 7 | 11 | 2 | 14 | 7 | 4 | 4 | 1 | 5 | 2 | 10 | 15 |
| ·131 | ·143 | ·137 | 75 | 79 | 77 | 5·8 | 4·9 | 5·4 | 1·928 | ·720 | 30th | 9 | 11 | 0 | 0 | 3 | 5 | 0 | 6 | 7 | 5 | 1 | 0 | 5 | 15 | 15 | 8 |
| ·151 | ·168 | ·160 | 84 | 91 | 88 | 5·3 | 4·5 | 4·9 | 4·237 | ·940 | 7th | 25 | 16 | 7 | 0 | 7 | 6 | 1 | 5 | 5 | 2 | 0 | 1 | 13 | 18 | 17 | 1 |
| ·156 | ·152 | ·154 | 87 | 90 | 89 | 5·1 | 4·5 | 4·8 | 3·783 | ·790 | 8th | 22 | 11 | 4 | 0 | 7 | 6 | 1 | 3 | 2 | 1 | 0 | 7 | 12 | 8 | 26 | 3 |
| ·148 | ·154 | ·151 | 88 | 90 | 89 | 4·5 | 4·5 | 4·5 | 1·960 | ·260 | 28th | 19 | 7 | 0 | 0 | 8 | 3 | 1 | 7 | 4 | 1 | 3 | 1 | 11 | 12 | 14 | 9 |
| ·154 | ·155 | ·155 | 96 | 96 | 96 | 5·6 | 5·2 | 5·4 | 2·025 | ·400 | 25th | 20 | 16 | 0 | 0 | 7 | 10 | 1 | 12 | 3 | 1 | 3 | 5 | 12 | 9 | 16 | 1 |
| ·170 | ·160 | ·165 | 94 | 94 | 94 | 9·0 | 6·5 | 7·8 | 2·023 | ·380 | 25th | 24 | 15 | 1 | 0 | 1 | 17 | 1 | 9 | 3 | 4 | 7 | 2 | 12 | 8 | 17 | 0 |
| ·170 | ·177 | ·174 | 92 | 92 | 92 | 8·3 | 6·6 | 7·5 | 1·130 | ·260 | 27th | 14 | 15 | 0 | 0 | 2 | 18 | 0 | 3 | 6 | 0 | 4 | 1 | 15 | 7 | 17 | 9 |
| ·175 | ·177 | ·176 | 93 | 93 | 93 | 8·6 | 7·8 | 8·2 | 1·340 | ·220 | 31st | 14 | 9 | 0 | 0 | 0 | 19 | 0 | 14 | 6 | 2 | 5 | 0 | 5 | 11 | 10 | 9 |
| ·168 | ·163 | ·166 | 91 | 87 | 89 | 6·4 | 5·8 | 6·1 | 1·290 | ·560 | 25th | 16 | 4 | 0 | 0 | 2 | 7 | 1 | 9 | 3 | 1 | 2 | 3 | 6 | 19 | 11 | 8 |
| ·148 | ·143 | ·146 | 85 | 83 | 84 | 6·4 | 6·9 | 6·7 | 2·960 | ·630 | 6th | 11 | 10 | 2 | 0 | 0 | 11 | 3 | 15 | 5 | 3 | 0 | 0 | 2 | 8 | 20 | 9 |
| ·156 | ·160 | ·158 | 96 | 94 | 95 | 6·7 | 5·2 | 6·0 | 2·550 | ·430 | 18th | 13 | 11 | 0 | 0 | 3 | 10 | 3 | 22 | 2 | 10 | 3 | 1 | 9 | 2 | 12 | 1 |
| ·160 | ·163 | ·162 | 90 | 89 | 90 | 9·8 | 7·2 | 8·5 | 1·810 | ·420 | 26th | 15 | 8 | 0 | 0 | 0 | 22 | 0 | 3 | 8 | 2 | 1 | 0 | 24 | 2 | 7 | 15 |
| ·167 | ·161 | ·164 | 94 | 92 | 93 | 7·9 | 6·5 | 7·2 | 1·650 | ·399 | 25th | 13 | 10 | 0 | 0 | 1 | 16 | 0 | 14 | 4 | 2 | 2 | 2 | 11 | 13 | 7 | 7 |
| ·164 | ·161 | ·163 | 96 | 93 | 95 | 9·0 | 6·6 | 7·8 | 2·040 | ·440 | 25th | 20 | 15 | 2 | 0 | 1 | 19 | 2 | 10 | 6 | 3 | 2 | 5 | 11 | 7 | 10 | 8 |
| ·155 | ·158 | ·157 | 86 | 86 | 86 | 6·9 | 7·2 | 7·1 | 2·606 | ·563 | 28th | 18 | 11 | 1 | 0 | 0 | 8 | 1 | 19 | 1 | 5 | 3 | 0 | 10 | 12 | 12 | 0 |
| — | — | — | — | — | — | 5·6 | 5·2 | 5·4 | 2·023 | ·404 | 28th | 16 | 6 | 0 | 0 | 5 | 6 | 1 | 7 | 5 | 1 | 1 | 1 | 4 | 4 | 6 | 33 |
| ·176 | ·175 | ·176 | 96 | 96 | 96 | 7·3 | 6·3 | 6·8 | 2·070 | ·640 | 25th | 11 | 7 | 0 | 0 | 5 | 16 | 0 | 7 | 1 | 0 | 0 | 1 | 7 | 7 | 1 | 38 |
| ·176 | ·173 | ·175 | 91 | 91 | 91 | 8·0 | 6·5 | 7·3 | 1·493 | ·415 | 26th | 13 | 7 | 0 | 0 | 2 | 15 | 0 | 3 | 2 | 1 | 3 | 1 | 15 | 5 | 19 | 13 |
| ·190 | ·190 | ·190 | 90 | 91 | 91 | 8·0 | 6·5 | 7·3 | 2·590 | ·470 | 16th | 19 | 12 | 6 | 0 | 1 | 18 | 2 | 0 | 7 | 3 | 0 | 5 | 14 | 15 | 11 | 7 |
| ·184 | ·188 | ·186 | 92 | 94 | 93 | 7·9 | 6·6 | 7·3 | 2·590 | ·590 | 16th | 23 | 11 | 3 | 1 | 3 | 17 | 1 | 18 | 6 | 2 | 5 | 4 | 11 | 8 | 8 | 0 |
| ·178 | ·181 | ·180 | 86 | 86 | 86 | 7·7 | 6·4 | 7·1 | 1·663 | ·333 | 25th | 15 | 6 | 0 | 0 | 2 | 15 | 0 | 8 | 14 | 1 | 3 | 1 | 11 | 3 | 17 | 4 |
| ·186 | ·189 | ·188 | 90 | 89 | 90 | 6·8 | 6·9 | 6·9 | 2·585 | ·580 | 16th | 19 | 7 | 3 | 0 | 4 | 15 | 1 | 11 | 14 | 2 | 3 | 3 | 9 | 12 | 6 | 2 |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| ·180 | ·183 | ·182 | 90 | 90 | 90 | 5·1 | 5·1 | 5·1 | 2·818 | ·725 | 29th | 18 | 10 | 4 | 0 | 3 | 5 | 0 | 8 | 4 | 6 | 3 | 0 | 4 | 4 | 11 | 22 |
| ·157 | ·160 | ·159 | 98 | 98 | 98 | 7·1 | 7·0 | 7·1 | 2·965 | ·410 | 28th | 17 | 10 | 2 | 0 | 3 | 14 | 0 | 16 | 8 | 2 | 1 | 4 | 2 | 4 | 3 | 22 |
| ·178 | ·176 | ·177 | 84 | 83 | 84 | 5·9 | 5·2 | 5·6 | 1·954 | ·300 | 19th | 19 | 12 | 3 | 1 | 6 | 9 | 1 | 13 | 8 | 5 | 6 | 5 | 5 | 13 | 7 | 0 |
| ·179 | ·176 | ·178 | 95 | 94 | 94 | 6·3 | 4·1 | 5·2 | 2·750 | ·510 | 28th | 18 | 6 | 1 | 0 | 8 | 8 | 1 | 10 | 1 | 7 | 1 | 3 | 3 | 5 | 2 | 30 |
| ·174 | ·176 | ·175 | 96 | 95 | 96 | 5·5 | 5·4 | 5·5 | 7·020 | 1·240 | 28th | 20 | 10 | 1 | 0 | 7 | 11 | 4 | 6 | 8 | 6 | 5 | 3 | 2 | 9 | 5 | 18 |
| ·194 | ·192 | ·193 | 89 | 87 | 88 | 6·5 | 6·5 | 6·5 | 3·210 | ·650 | 25th | 18 | 13 | 6 | 0 | 4 | 14 | 2 | 12 | 8 | 3 | 2 | 2 | 12 | 11 | 9 | 3 |
| ·157 | ·160 | ·159 | 94 | 93 | 94 | 6·5 | 6·6 | 6·6 | 1·920 | ·260 | 31st | 16 | 12 | 1 | 0 | 4 | 12 | 0 | 8 | 2 | 3 | 2 | 2 | 4 | 1 | 5 | 35 |
| ·168 | ·176 | ·172 | 92 | 91 | 91 | 6·2 | 5·1 | 5·7 | 1·616 | ·284 | 11th | 10 | 12 | 5 | 0 | 2 | 7 | 2 | 3 | 0 | 1 | 4 | 2 | 2 | 34 | 10 | 6 |
| — | — | — | — | — | — | 5·3 | 4·5 | 4·9 | 1·227 | ·232 | 28th | 14 | 10 | 0 | 0 | 5 | 7 | 0 | 3 | 1 | 2 | 5 | 0 | 7 | 7 | 6 | 25 |
| ·210 | ·207 | ·209 | 83 | 82 | 82 | 6·9 | 7·0 | 7·0 | 4·288 | ·640 | 18th | 29 | 7 | 10 | 1 | 0 | 12 | 2 | 10 | 14 | 7 | 5 | 0 | 5 | 7 | 4 | 4 |

TABLE C., DECEMBER.—Giving a SUMMARY of the METEOROLOGICAL OBSERVATIONS made at TELEGRAPHIC REPORTING STATIONS in the BRITISH ISLANDS during the Month of DECEMBER 1878. Observations are made at 8 a.m. daily.

(The Stations are grouped in Districts, and then arranged in order of Latitude, beginning in each case with the Station lying furthest North.)

| NAMES OF DISTRICTS. | NAMES OF STATIONS. | Mean Height of Barometer (at 32° Fahrenheit and Mean Sea Level) from Observations made at 8 a.m. | AIR TEMPERATURE. | | | | | | | | TENSION OF VAPOUR. | RELATIVE HUMIDITY. | AMOUNT OF CLOUD. | RAINFALL. | | | WEATHER. No. of Days of | | | | | | | WIND. No. of Observations of | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | At 8 a.m. | Means of Minima. | Means of Maxima. | Means of Min. and Max. combined. | Absolute Extremes. Minimum. | Date. | Absolute Extremes. Maximum. | Date. | | | | Total Fall in the Month. | Maximum Fall in one Day. | Date. | Rain. | Snow. | Hail. | Thunderstorms. | Clear Sky. | Overcast. | Gales. | North. | N.E. | East. | S.E. | South. | S.W. | West. | N.W. | Calms. |
| | | ins. | ° | ° | ° | ° | ° | | ° | | in. | % | | ins. | ins. | | | | | | | | | | | | | | | | | |
| 0. SCOTLAND, N. | Sumburgh Head | 29·625 | 34·8 | 30·1 | 37·6 | 33·9 | 22 | 22nd | 46 | 4th | 0·174 | 86 | 7·0 | 3·18 | 0·76 | 29th | 29 | 9 | 0 | 0 | 6 | 12 | 2 | 9 | 12 | 4 | 2 | 2 | 1 | 0 | 1 | 0 |
| | Thurso | 29·643 | 35·3 | 29·5 | 39·1 | 34·3 | 17 | 28th | 44 | 4th | ·199 | 96 | 7·4 | 5·47 | 0·50 | 15th | 28 | 12 | 3 | 1 | 2 | 13 | 0 | 8 | 2 | 3 | 2 | 3 | 0 | 3 | 5 | 5 |
| | Wick | 29·630 | 33·3 | 26·8 | 38·3 | 32·6 | 19 | 16th | 43 | 5th, 29th, 30th, 31st. | ·166 | 87 | 8·3 | 4·58 | 0·80 | 28th | 28 | 4 | 1 | 0 | 1 | 21 | 1 | 4 | 1 | 3 | 2 | 1 | 3 | 2 | 13 | 2 |
| | Stornoway | 29·650 | 34·1 | 29·6 | 37·5 | 33·6 | 22 | 16th, 24th | 46 | 4th | ·191 | 97 | 5·6 | 3·71 | 0·55 | 30th | 23 | 10 | 1 | 0 | 8 | 10 | 3 | 11 | 5 | 3 | 0 | 1 | 1 | 3 | 2 | 5 |
| 1. SCOTLAND, E. | Nairn | 29·653 | 31·0 | 26·6 | 35·8 | 31·2 | 11 | 28th | 44 | 31st | ·151 | 87 | 6·0 | 1·65 | 0·43 | 18th | 19 | 13 | 0 | 1 | 9 | 14 | 0 | 1 | 4 | 0 | 1 | 0 | 1 | 4 | 8 | 12 |
| | Aberdeen | 29·624 | 31·5 | 27·1 | 36·3 | 31·7 | 15 | 14th | 45 | 31st | ·157 | 88 | 5·4 | 4·77 | 0·83 | 28th | 24 | 19 | 6 | 1 | 10 | 10 | 0 | 6 | 1 | 0 | 1 | 1 | 4 | 5 | 11 | 2 |
| | Leith | 29·639 | 32·2 | 27·3 | 38·0 | 32·7 | 15 | 14th | 51 | 31st | ·143 | 78 | 5·6 | 1·62 | 0·19 | 28th, 29th | 19 | 10 | 0 | 0 | 8 | 9 | 1 | 2 | 3 | 2 | 0 | 0 | 5 | 15 | 2 | 2 |
| 2. ENGLAND, N. E. | Shields | 29·661 | 31·0 | 26·5 | 37·2 | 31·9 | 10 | 14th | 51 | 31st | ·153 | 88 | 6·0 | 3·12 | 0·54 | 8th | 24 | 17 | 4 | 0 | 7 | 10 | 3 | 3 | 1 | 3 | 0 | 0 | 4 | 7 | 10 | 3 |
| | Scarborough | 29·656 | 32·6 | 28·8 | 37·7 | 33·3 | 17 | 14th | 51 | 31st | ·173 | 93 | 7·2 | 3·83 | 0·69 | 7th | 20 | 9 | 2 | 1 | 7 | 17 | 0 | 5 | 1 | 1 | 0 | 1 | 6 | 8 | 9 | 0 |
| | York | 29·684 | 29·6 | 24·3 | 36·1 | 30·2 | 11 | 25th | 50 | 30th, 31st | ·151 | 90 | 6·1 | 1·45 | 0·38 | 25th | 16 | 5 | 0 | 0 | 8 | 14 | 1 | 16 | 0 | 1 | 0 | 3 | 3 | 5 | 3 | 0 |
| 3. ENGLAND, E. | Yarmouth | 29·685 | 32·6 | 28·1 | 36·8 | 32·5 | 18 | 17th | 53 | 30th, 31st | ·176 | 95 | 8·1 | 2·09 | 0·31 | 27th | 18 | 10 | 7 | 0 | 1 | 18 | 0 | 2 | 0 | 3 | 0 | 2 | 6 | 11 | 5 | 2 |
| | Cambridge | 29·712 | 31·2 | 26·4 | 37·9 | 32·2 | 12 | 25th | 59 | 31st | ·166 | 95 | 8·0 | 1·33 | 0·43 | 26th | 16 | 3 | 0 | 0 | 5 | 21 | 0 | 3 | 0 | 0 | 3 | 0 | 10 | 2 | 10 | 3 |
| 4. MIDLAND COUNTIES. | Nottingham | 29·726 | 29·4 | 24·5 | 36·3 | 30·4 | 6 | 25th | 59 | 31st | ·149 | 91 | 7·2 | 2·16 | 0·67 | 26th | 18 | 8 | 1 | 0 | 6 | 18 | 2 | 5 | 1 | 0 | 1 | 2 | 10 | 1 | 3 | 8 |
| | Oxford | 29·737 | 31·3 | 27·3 | 37·2 | 32·3 | 6 | 25th | 53 | 29th, 30th | ·157 | 89 | 8·8 | 1·40 | 0·40 | 25th | 12 | 8 | 0 | 0 | 3 | 26 | 0 | 3 | 0 | 1 | 0 | 2 | 2 | 4 | 7 | 12 |
| 5. ENGLAND, S. | London | 29·694 | 33·2 | 29·2 | 39·0 | 34·1 | 11 | 25th | 56 | 30th | ·171 | 90 | 7·6 | 1·13 | 0·14 | 25th, 26th, 27th, 31st. | 16 | 7 | 0 | 0 | 3 | 19 | 2 | 4 | 1 | 2 | 1 | 4 | 6 | 5 | 6 | 2 |
| | Dover | 29·717 | 34·9 | 31·6 | 39·4 | 35·5 | 25 | 11th | 50 | 30th, 31st | ·173 | 85 | 5·7 | 2·53 | 0·56 | 1st | 21 | 8 | 1 | 0 | 7 | 10 | 0 | 10 | 1 | 1 | 2 | 0 | 8 | 5 | 4 | 0 |
| | Hurst Castle | 29·727 | 35·9 | 31·1 | 41·1 | 36·1 | 22 | 15th | 49 | 29th, 30th, 31st. | ·192 | 91 | 6·2 | 1·54 | 0·26 | 31st | 16 | 3 | 1 | 0 | 7 | 10 | 1 | 5 | 8 | 2 | 1 | 0 | 5 | 3 | 6 | 1 |
| 6. SCOTLAND, W. | Ardrossan | 29·675 | 33·3 | 29·0 | 40·2 | 34·6 | 22 | 16th, 17th, 24th. | 50 | 30th, 31st | ·162 | 85 | 4·2 | 1·86 | 0·45 | 29th | 14 | 3 | 1 | 0 | 16 | 6 | 2 | 4 | 9 | 6 | 4 | 0 | 1 | 2 | 5 | 0 |
| 7. ENGLAND, N.W. | Liverpool | 29·699 | 33·7 | 30·1 | 38·2 | 34·2 | 13 | 25th | 52 | 31st | ·167 | 86 | 6·2 | 1·85 | 0·33 | 28th | 15 | 1 | 0 | 0 | 7 | 10 | 0 | 4 | 2 | 2 | 3 | 3 | 5 | 6 | 6 | 0 |
| | Holyhead | 29·702 | 38·4 | 34·5 | 42·5 | 38·5 | 26 | 13th, 14th | 52 | 30th, 31st | ·195 | 85 | 6·7 | 3·23 | 0·97 | 28th | 22 | 8 | 6 | 0 | 5 | 9 | 1 | 4 | 4 | 3 | 2 | 3 | 5 | 3 | 7 | 0 |
| 8. ENGLAND, S.W. | Pembroke | 29·724 | 38·2 | 34·1 | 42·6 | 38·4 | 25 | 11th | 51 | 30th, 31st | ·206 | 90 | 6·2 | 3·97 | 1·04 | 28th | 23 | 4 | 3 | 1 | 7 | 9 | 5 | 5 | 7 | 2 | 2 | 1 | 2 | 4 | 8 | 0 |
| | Plymouth | 29·747 | 33·9 | 30·1 | 41·9 | 36·0 | 19 | 15th | 54 | 29th | ·183 | 93 | 4·7 | 3·64 | 0·94 | 28th | 18 | 3 | 0 | 0 | 15 | 12 | 1 | 5 | 7 | 2 | 1 | 1 | 3 | 3 | 6 | 3 |
| 9. IRELAND, N. | Greencastle | 29·702 | 33·5 | 27·8 | 39·7 | 33·8 | 12 | 25th | 48 | 5th, 31st | ·165 | 86 | 7·8 | 5·36 | 0·56 | 28th | 25 | 5 | 0 | 0 | 5 | 22 | 0 | 10 | 5 | 1 | 1 | 2 | 1 | 3 | 8 | 0 |
| | Donaghadee | 29·719 | 34·8 | 31·0 | 39·6 | 35·3 | 21 | 25th | 49 | 31st | ·184 | 91 | 5·0 | 2·24 | 0·44 | 19th | 20 | 2 | 0 | 0 | 11 | 6 | 2 | 2 | 4 | 3 | 1 | 1 | 5 | 13 | 2 | 0 |
| | Mullaghmore | 29·733 | 36·6 | 32·3 | 41·3 | 36·8 | 25 | 15th, 17th, 25th. | 50 | 30th, 31st | ·199 | 92 | 6·5 | 2·92 | 0·48 | 30th | 21 | 8 | 3 | 0 | 6 | 10 | 5 | 6 | 4 | 6 | 1 | 1 | 6 | 2 | 4 | 1 |
| 10. IRELAND, S. | Kingstown | 29·736 | 35·1 | 31·1 | 39·0 | 35·1 | 22 | 24th, 25th | 53 | 30th, 31st | ·175 | 85 | 6·1 | 1·47 | 0·24 | 25th | 17 | 4 | 0 | 1 | 5 | 7 | 1 | 0 | 0 | 1 | 1 | 1 | 4 | 14 | 10 | 0 |
| | Valencia | 29·771 | 38·5 | 33·3 | 45·5 | 38·9 | 26 | 12th, 17th | 55 | 29th, 30th | ·201 | 86 | 6·7 | 4·27 | 0·79 | 27th | 26 | 5 | 1 | 0 | 7 | 13 | 3 | 8 | 5 | 4 | 0 | 2 | 3 | 0 | 5 | 4 |
| | Roche's Point | 29·770 | 36·2 | 32·4 | 42·1 | 37·3 | 26 | 11th, 12th, 15th, 17th. | 52 | 31st | ·186 | 87 | 5·0 | 3·32 | 0·88 | 25th | 18 | 3 | 1 | 1 | 12 | 10 | 3 | 15 | 5 | 1 | 1 | 0 | 2 | 2 | 5 | 0 |
| CHANNEL ISLANDS | Scilly (St. Mary's) | 29·754 | 44·2 | 40·0 | 46·5 | 43·3 | 32 | 11th | 53 | 31st | ·236 | 81 | 8·7 | 4·73 | 0·75 | 28th | 29 | 3 | 9 | 1 | 0 | 20 | 9 | 7 | 7 | 2 | 1 | 2 | 4 | 3 | 4 | 1 |
| | Jersey (Noirmont) | 29·725 | 39·5 | 36·1 | 44·0 | 40·1 | 27 | 11th | 54 | 30th | ·212 | 88 | 7·5 | 4·02 | 0·65 | 18th | 27 | 5 | 9 | 0 | 1 | 10 | 5 | 6 | 5 | 3 | 1 | 4 | 4 | 3 | 5 | 0 |

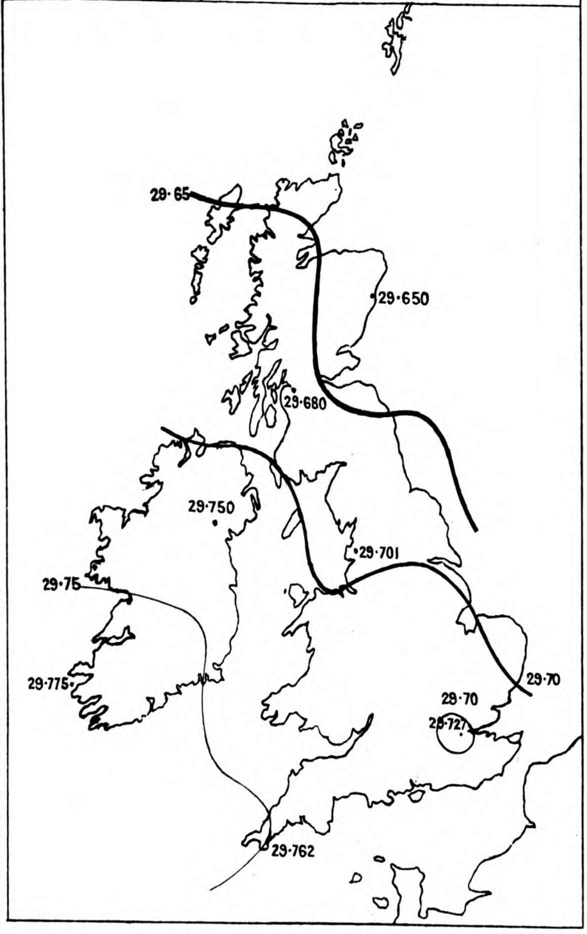
# MONTHLY WIND CHART FOR DECEMBER 1878.


12
8
4
0
4
60
60
56
56
52
52
8
4
0

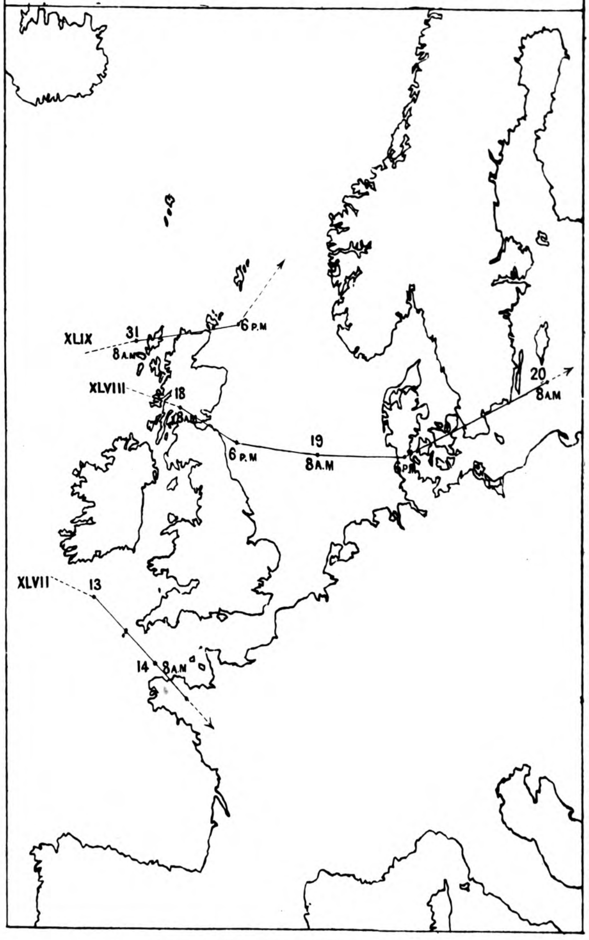
*To face p. 138.*

DANGERFIELD, LITH. 22, BEDFORD ST. COVENT GARDEN. 14283

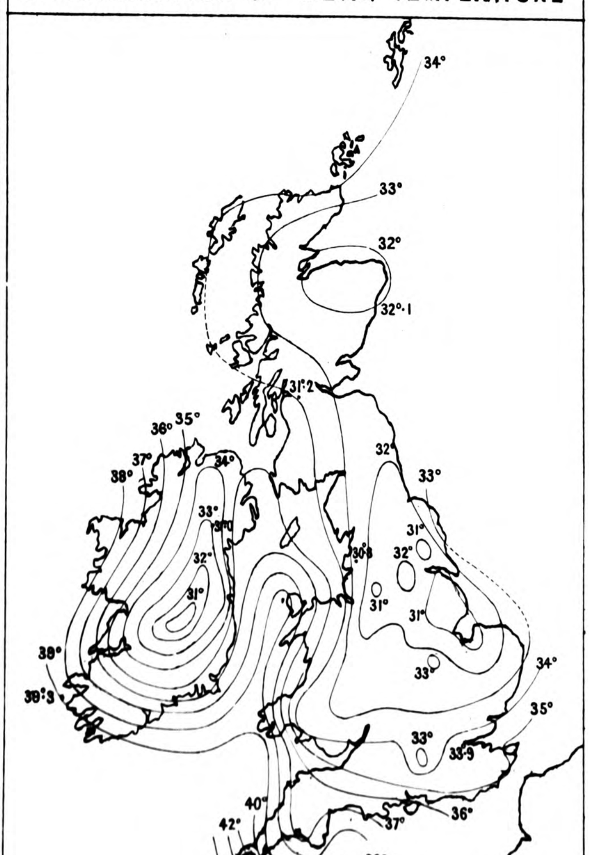
# MONTHLY WEATHER CHART. DECEMBER 1878.


1. DISTRIBUTION OF MEAN PRESSURE

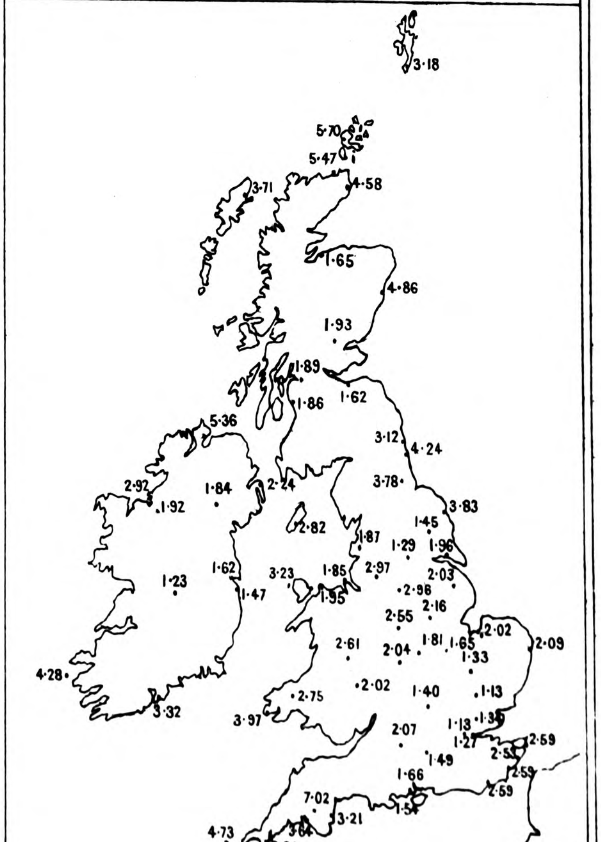
29·65
29·650
29·680
29·750
29·701
29·75
29·775
29·70
29·727
29·70
29·762


2. MOVEMENTS OF DEPRESSIONS.

XLIX
31
8 A.M.
6 P.M.
XLVIII
18
8 A.M.
6 P.M.
19
8 A.M.
6 P.M.
20
8 A.M.
XLVII
13
14
8 A.M.


3. DISTRIBUTION OF MEAN TEMPERATURE

34°
33°
32°
32°·1
31°·2
36°
35°
37°
38°
34°
33°
31°·0
32°
31°
32°
33°
30°·8
31°
32°
31°
31°
33°
34°
35°
38°
38°·3
33°
33·9
40°
42°
36°
37°
39°·4
39°
43°
41°


4. RAINFALL

3·18
5·70
5·47
3·71
4·58
1·65
4·86
1·93
1·89
1·86
1·62
5·36
3·12
4·24
2·92
1·84
2·24
3·78
1·92
3·83
2·82
1·45
1·87
1·29
1·96
1·62
3·23
1·85
2·97
2·03
1·23
1·47
1·95
2·96
2·16
2·55
2·02
2·61
2·04
1·81
1·65
2·09
1·33
4·28
2·02
1·40
1·13
2·75
3·32
3·97
1·13
1·35
2·07
1·27
2·59
2·55
1·49
2·59
1·66
7·02
2·59
3·21
1·54
4·73
3·64
6·24
4·02
4·29

*To follow Wind Chart for December.*

DANGERFIELD. LITH. 22. BEDFORD ST. COVENT GARDEN. 14283

# APPENDIX.

## APPENDIX I.

### TABLE I.—MEAN MONTHLY RESULTS from the continuous RECORDS at the SEVEN BRITISH OBSERVATORIES for the Year 1878.

### VALENCIA.

| 1878. MONTHS. | THERMOMETER. | | | | | BAROMETER. | | | | | VAPOUR TENSION. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Means. | Extremes. | | | | Means. | Extremes. | | | | |
| | | Maximum. | | Minimum. | | | Maximum. | | Minimum. | | |
| | | Day. | Ther. | Day. | Ther. | | Day. | Bar. | Day. | Bar. | |
| | ° | D. H. | ° | D. H. | ° | ins. | D. H. | ins. | D. H. | ins. | in. |
| January - - | 47·0 | 21st, 11 a.m. | 55·1 | 10th, 2 a.m. | 32·1 | 30·169 | 31st, Midnt. | 30·640 | 24th, 1 p.m. | 29·558 | ·277 |
| February - - | 47·8 | 28th, 2 p.m. | 55·2 | 2nd, 6 a.m. | 33·4 | ·133 | 21st, 8 p.m. | ·668 | 27th, 9 a.m. | ·461 | ·286 |
| March - - | 47·4 | 20th, 3 p.m. | 55·9 | 30th, 8 a.m. | 35·8 | 30·180 | **17th, 10 a.m.** | **·684** | 31st, 9 p.m. | ·268 | ·270 |
| April - - | 50·1 | 25th, 5 p.m. | 63·4 | 1st, 6 a.m. | 35·6 | 29·708 | 26th, Midnt. | ·167 | 19th, 5 p.m. | ·245 | ·299 |
| May - - - | 53·3 | 30th, 3 p.m. | 63·8 | 8th, 5 a.m. | 43·9 | ·652 | 29th, 9 p.m. | ·203 | 15th, 4 a.m. | ·016 | ·323 |
| June - - - | 56·9 | 30th, 4 p.m. | 69·0 | 1st, 5 a.m. | 45·8 | 29·849 | 6th, 1 a.m. | ·151 | 11th, 7 a.m. | ·274 | ·384 |
| July - - - | 62·0 | **22nd, 6 p.m.** | **80·1** | 25th, 5 a.m. | 51·8 | 30·073 | 18th, 9 a.m. | ·419 | 25th, 4 p.m. | ·753 | ·462 |
| August - - | 61·1 | 1st, 1 p.m. | 74·3 | 21st, 5 a.m. | 52·7 | 29·691 | 1st, 1 a.m. | ·251 | 27th, 9 p.m. | ·299 | ·447 |
| September - - | 58·1 | 4th, 3 p.m. | 69·0 | 23rd, 1 a.m.<br>1 p.m. | 47·5 | ·961† | 12th, 10 p.m. | ·315 | 15th, 11 a.m. | 29·364 | ·403 |
| October - - | 53·2 | 4th, 2 p.m. | 64·6 | 31st, 3 a.m. | 35·2 | ·659 | 12th, 1 a.m.<br>and 4 a.m. | ·165 | **9th, 8 p.m.** | **28·479** | ·338 |
| November - - | 43·9 | 10th, 1 a.m. | 53·8 | 26th, 2 a.m. | 33·1 | ·940 | 2nd, 11 p.m. | ·451 | 10th, 1 p.m. | 29·348 | ·231 |
| December - - | 39·3 | 29th, 11 p.m. | 53·5 | **14th, 7 p.m.** | **27·4** | 29·749* | 4th, 11 a.m. | 30·411 | 29th, 9 p.m. | 28·893 | ·209 |
| Annual - - | 51·7 | — | — | — | — | 29·897 | — | — | — | — | ·327 |

* Mean for one day is approximate.

† Means for two days are approximate.

R 8610. Wt. 9254.

[A]

## Table I.—Mean Monthly Results, &c.—*continued.*

### ARMAGH.

| 1878. MONTHS. | THERMOMETER. | | | | | BAROMETER. | | | | | VAPOUR TENSION. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Means. | Extremes. | | | | Means. | Extremes. | | | | |
| | | Maximum. | | Minimum. | | | Maximum. | | Minimum. | | |
| | | Day. | Ther. | Day. | Ther. | | Day. | Bar. | Day. | Bar. | |
| | ° | D. H. | ° | D. H. | ° | ins. | D. H. | ins. | D. H. | ins. | in. |
| January - - | 41·3 | 21st, 3 a.m. | 53·4 | 25th, 10 a.m. | 27·7 | 29·878 | 31st, 10 p.m. | 30·458 | 25th, 2 a.m. | 29·247 | ·236 |
| February - - | 43·4 | 27th, 2 p.m. | 55·0 | 1st, 7 a.m. | 30·9 | ·935 | 1st, 1 a.m. | ·449 | 27th, 4 p.m. | ·242 | ·249 |
| March - - | 42·6 | 21st, Noon | 53·3 | 28th, 6 a.m. | 30·4 | ·883 | **16th, 10 a.m.** | **·477** | 31st, Midnt. | 29·032 | ·227 |
| April - - | 47·6 | 15th, ? | 60·4† | 1st, 2 a.m. | 30·3 | ·579 | 27th, 1 a.m.<br>7 a.m. | ·013 | 1st, 2 p.m.<br>5 p.m. | 28·917 | ·265 |
| May - - - | 51·2* | 18th, 2 p.m.? | 63·0 | 21st, 2 a.m. | 40·0 | ·477* | 29th, 11 p.m. | 30·036 | 15th, 11 a.m. | ·822 | ·314 |
| June - - - | 56·3 | **28th, 4 p.m.** | **76·2** | 1st, 4 a.m. | 39·7 | ·664 | 6th, 7 a.m. | 29·984 | 11th, 5 p.m. | 28·985 | ·379 |
| July - - - | 60·1 | 22nd, 6 p.m. | 75·4 | 29th, 5 a.m. | 46·8 | ·855 | 18th, 11 a.m. | 30·212 | 24th, 3 a.m. | 29·482 | ·422 |
| August - - | 59·3 | 1st, 3 p.m. | 72·0 | 17th, 2 a.m. | 48·0 | ·516 | 1st, 1 a.m. | ·158 | 14th, 2 a.m. | 29·038 | ·423 |
| September - - | 55·4* | 5th, 3 p.m. | 69·0 | 23rd, 7 a.m. | 39·9 | ·690 | 12th, 11 p.m. | ·041 | 15th, 11 a.m. | 28·923 | ·377 |
| October - - | 49·9* | 6th, 2 p.m. | 64·9 | 30th, 1 a.m. | 33·4 | ·429 | 1st, Midnt. | ·031 | **10th, 5 a.m.** | **·399** | ·313 |
| November - - | 37·6 | 9th, 11 p.m. | 47·8 | 12th, 7 a.m. | 26·2 | ·665 | 19th, Midnt. | ·203 | 10th, 2 p.m. | ·951 | ·202 |
| December - - | 31·0 | 31st, 2 a.m. | 49·1 | **25th, 2 a.m.** | **6·8** | 29·514 | 4th, 9 a.m. | 30·175 | 30th, 2 a.m. | 28·708 | ·153 |
| Annual - - | 48·0 | — | — | — | — | 29·674 | — | — | — | — | ·297 |

* Mean for one day is approximate. † Corrected reading of Phillips' maximum thermometer.

### GLASGOW.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ° | D. H. | ° | D. H. | ° | ins. | D. H. | ins. | D. H. | ins. | in. |
| January - - | 39·0 | 21st, 2 a.m. | 49·8 | 11th, 8 a.m. | 20·7 | 29·812 | 31st, 9 p.m.<br>10 p.m. | 30·413 | 23rd, 4 p.m. | 28·935 | ·207 |
| February - - | 42·2 | 17th, 7 p.m.<br>27th, 2 p.m. | 52·1 | 3rd, 6 a.m. | 27·9 | ·917 | 1st, 1 a.m. | ·393 | 28th, 3 p.m. | 29·220 | ·235 |
| March - - | 41·1 | 19th, 1 p.m.<br>2 p.m. | 53·5 | 28th, 6 a.m. | 27·3 | ·800 | **16th, 10 a.m.** | **·460** | 31st, Midnt. | 28·867 | ·196 |
| April - - | 46·3 | 29th, 4 p.m. | 63·9 | 5th, 6 a.m. | 30·5 | ·634 | 26th, Midnt.<br>27th, 8 a.m.<br>9 a.m. | 30·046 | 1st, 4 p.m. | ·683 | ·245 |
| May - - - | 50·9 | 5th, 4 p.m. | 66·4 | 21st, 7 a.m. | 36·5 | ·496 | 29th, 10 p.m. | 29·966 | 15th, 3 p.m.<br>4 p.m. | 28·921 | ·284 |
| June - - - | 56·7 | **27th, ?** | **84·9*** | 5th, 3 a.m. | 40·5 | ·691 | 6th, 10 a.m. | 29·977 | 11th, 11 p.m. | 29·067 | ·336 |
| July - - - | 59·6 | 21st, 5 p.m. | 78·9 | 14th, 4 a.m.<br>31st, 5 a.m. | 48·5 | ·807 | 31st, 7 a.m.<br>8 a.m. | 30·188 | 25th, 3 p.m. | ·449 | ·381 |
| August - - | 58·8 | 1st, 3 p.m. | 75·2 | 17th, 5 a.m. | 43·6 | ·527 | 1st, 1 a.m.<br>2 a.m. | 30·170 | 12th, 5 a.m.<br>13th, 3 a.m. | 29·033 | ·391 |
| September - - | 54·2 | 8th, 3 p.m. | 68·6 | 26th, 2 a.m. | 41·5 | ·627 | 10th, Noon | 29·975‡ | 15th, Noon | 28·758 | ·337 |
| October - - | 49·8 | 5th, 4 p.m. | 63·1 | 31st, 10 p.m. | 32·2 | ·411 | 2nd, 5 a.m. | 30·045 | **10th, 1 p.m.** | **·543** | ·288 |
| November - - | 38·6 | 10th, 1 p.m. | 47·0 | 29th, 2 a.m. | 26·8 | ·611 | 19th, 11 a.m.<br>Noon | ·170 | 10th, 3 p.m. | ·829 | ·189 |
| December - - | 31·2§ | 31st, 6 a.m. | 47·9 | **20th, ?** | **11·9†** | 29·470 | 4th, 1 a.m. | 30·164 | 31st, 5 p.m. | 28·608 | ·141 |
| Annual - - | 47·4 | — | — | — | — | 29·650 | — | — | — | — | ·269 |

* Corrected reading of Phillips' maximum thermometer. † Corrected reading of Rutherford's minimum thermometer.
‡ Approximate reading, trace faint. § Means for five days are approximate.

## Table I.—Mean Monthly Results, &c.—*continued.*

### ABERDEEN.

| 1878. | Thermometer. | | | | | Barometer. | | | | | Vapour Tension. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Extremes. | | | | | Extremes. | | | | |
| Months. | Means. | Maximum. | | Minimum. | | Means. | Maximum. | | Minimum. | | |
| | | Day. | Ther. | Day. | Ther. | | Day. | Bar. | Day. | Bar. | |
| | ° | D. H. | ° | D. H. | ° | ins. | D. H. | ins. | D. H. | ins. | in. |
| January - - | 37·7 | 16th, 5 a.m. | 52·0 | 25th, 5 a.m. | 24·0 | 29·869 | 31st, 11 a.m. | 30·474 | 23rd, 4 p.m. | 28·813 | ·189 |
| February - - | 42·3 | 22nd, 3 p.m. | 55·9 | 19th, 7 a.m. | 32·9 | ·989 | 1st, 1 a.m. | ·446 | 28th, 4 p.m. | 29·301 | ·222 |
| March - - | 39·1 | 20th, 2 p.m. | 54·4 | 28th, 7 a.m. | 22·0 | ·837 | **16th, 8 a.m.** | **·562** | 31st, Midnt. | 28·768 | ·185 |
| April - - | 43·0 | 16th, 2 p.m. | 61·6 | 1st, 6 a.m.<br>2nd, 4 a.m. | 29·9 | ·799 | 11th, Midnt. | ·245 | 1st, 5 a.m. | 28·613 | ·24[illegible] |
| May - - - | 48·5 | 5th, 11 a.m. | 63·4 | 20th, 7 a.m. | 36·0 | ·629 | 29th, 10 p.m. | ·079 | 15th, 7 p.m. | 29·094 | ·272 |
| June - - - | 53·2 | 26th, 1 p.m. | 75·0 | 15th, 3 a.m. | 37·0 | ·833 | 6th, 2 p.m. | ·128 | 9th, 7 a.m. | ·223 | ·320 |
| July - - - | 57·5 | **18th, 4 p.m.** | **78·5** | 4th, 3 a.m. | 39·9 | ·897 | 31st, 11 p.m. | ·312 | 6th, 4 a.m. | ·521 | ·367 |
| August - - | 56·9 | 12th, 2 p.m. | 70·7 | 20th, 5 a.m. | 43·9 | ·678 | 1st, 1 a.m. | ·309 | 13th, 7 a.m. | 29·023 | ·398 |
| September - - | 54·3 | 3rd, 3 p.m. | 70·9 | 26th, 5 a.m. | 39·0 | ·709 | 2nd, 7 a.m. | ·081 | 15th, Midnt. | 28·657 | ·325 |
| October - - | 48·9 | 3rd, 1 p.m. | 63·0 | 29th, 6 p.m. | 33·4 | ·516 | 2nd, 5 a.m.<br>6 a.m. | ·152 | 21st, 9 p.m. | ·606 | ·299 |
| November - - | 39·0 | 21st, 2 p.m. | 49·1 | 29th, 6 a.m. | 28·5 | ·691 | 18th, 11 p.m. | ·233 | 10th, 10 p.m. | ·851 | ·201 |
| December - - | 32·1 | 31st, 6 p.m. | 45·6 | **13th, 7 p.m.** | **16·3** | 29·549 | 3rd, 7 p.m.<br>8 p.m. | 30·262 | **31st, 7 p.m.** | **28·574** | ·159 |
| Annual - - | 46·0 | — | — | — | — | 29·750 | — | — | — | — | ·265 |

### FALMOUTH.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ° | D. H. | ° | D. H. | ° | ins. | D. H. | ins. | D. H. | ins. | in. |
| January - - | 45·3 | 21st, Noon | 53·3 | 25th, 2 p.m. | 32·0 | 30·012 | 12th, 10 a.m. | 30·478 | 24th, 4 p.m. | 29·250 | ·250 |
| February - - | 46·2 | 17th, Noon | 54·2 | 1st, 6 a.m. | 30·8 | 30·036 | **21st, 9 p.m.** | **·479** | 27th, 3 p.m. | 29·429 | ·272 |
| March - - | 45·4 | 7th, 11 a.m.<br>2 p.m. | 54·7 | 30th, 10 a.m. | 32·0 | 29·940 | 5th, 10 a.m.<br>11 a.m. | 30·453 | **29th, 4 a.m.** | **28·803** | ·242 |
| April - - | 48·7 | 25th, 3 p.m. | 60·4 | 6th, 6 a.m. | 37·2 | ·570 | 27th, 1 p.m. | 29·985 | 1st, 1 a.m. | 28·995 | ·296 |
| May - - - | 53·5 | 17th, 11 a.m.<br>1 p.m. | 60·7 | 21st, 4 a.m. | 43·8 | ·558 | 4th, 11 a.m. | 29·950 | 15th, 8 a.m. | 29·013 | ·343 |
| June - - - | 58·7 | 27th, 10 a.m.<br>1 p.m. | 71·8 | 1st, 5 a.m. | 49·6 | ·717 | 6th, 10 a.m.<br>11 a.m. | 30·054 | 11th, 11 a.m. | ·143 | ·406 |
| July - - - | 62·7 | **22nd, 3 p.m.** | **77·8** | 3rd, 1 a.m. | 53·9 | ·856 | 18th, 11 a.m. | ·156 | 24th, 4 a.m. | 29·544 | ·450 |
| August - - | 61·9 | 8th, 2 p.m. | 72·4 | 4th, 6 a.m. | 53·8 | ·536 | 1st, 1 a.m. | ·061 | 29th, 10 p.m. | 28·958 | ·460 |
| September - - | 58·7 | 6th, 2 p.m. | 69·5 | 24th, 6 a.m. | 48·7 | ·820* | 2nd, 10 a.m.<br>11 a.m. | ·102 | 23rd, 4 a.m.<br>5 a.m. | 29·294 | ·401 |
| October - - | 53·8 | 5th, 1 p.m | 63·4 | 31st, Midnt. | 39·8 | ·561 | 12th, 10 a.m. | ·096 | 7th, 7 p.m. | 28·806 | ·342 |
| November - - | 43·4 | 24th, 3 p.n | 53·5 | 12th, 4 p.m. | 32·8 | ·614 | 19th, 9 p.m. | ·244 | 12th, Noon | 29·014 | ·224 |
| December - - | 39·4 | 30th, 5 a.m | 53·4 | **11th, 9 a.m.** | **24·0** | 29·526 | 4th, 11 a.m. | 30·150 | 28th, 7 p.m. | 29·054 | ·205 |
| Annual - - | 51·5 | — | — | — | — | 29·729 | — | — | — | — | ·324 |

* Means for two days are approximate.

## Table I.—Mean Monthly Results, &c.—*continued.*

### STONYHURST.

| 1878. MONTHS. | THERMOMETER. |  |  |  |  | BAROMETER. |  |  |  |  | VAPOUR TENSION. |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Means. | Extremes. |  |  |  | Means. | Extremes. |  |  |  |  |
|  |  | Maximum. |  | Minimum. |  |  | Maximum. |  | Minimum. |  |  |
|  |  | Day. | Ther. | Day. | Ther. |  | Day. | Bar. | Day. | Bar. |  |
|  | ° | D. H. | ° | D. H. | ° | ins. | D. H. | ins. | D. H. | ins. | in. |
| January | 39·7 | 21st, 5 a.m. | 52·4 | 30th, 5 a.m.<br>8 a.m. | 26·0 | 29·693 | 31st, 10 p.m. | 30·254 | 25th, 5 a.m. | 28·882 | ·214 |
| February | 40·7 | 17th, 3 p.m. | 56·6 | 1st, 6 a.m. | 26·0 | ·812 | 1st, 1 a.m.<br>3 a.m. | ·236 | 27th, 6 p.m. | 29·192 | ·224 |
| March | 40·5 | 19th, 1 p.m. | 54·0 | 24th, 6 a.m. | 25·8 | ·648 | **16th, 11 a.m.** | **30·287** | 31st, Midnt. | 28·762 | ·200 |
| April | 46·8 | 29th, 3 p.m. | 63·0 | 5th, 3 a.m. | 31·0 | ·441 | 27th, 7 a.m. | 29·837 | 1st, 3 p.m. | ·642 | ·248 |
| May | 51·9 | 5th, 4 p.m.<br>12th, 3 p.m. | 66·0 | 21st, 3 a.m. | 37·1 | ·345 | 29th, Midnt. | ·798 | 15th, 1 p.m. | ·840 | ·303 |
| June | 57·6 | **27th, 2 p.m.** | **83·6** | 14th, 4 a.m. | 40·0 | ·524 | 22nd, 7 a.m. | 29·809 | 11th, 6 p.m. | 28·857 | ·362 |
| July | 60·5 | 21st, 4 p.m. | 83·1 | 2nd, 4 a.m. | 45·2 | ·643 | 31st, 10 a.m. | 30·019 | 25th, 5 a.m. | 29·261 | ·409 |
| August | 59·7 | 1st, 3 p.m. | 72·8 | 26th, 5 a.m. | 46·2 | ·346 | 1st, 1 a.m. | 30·006 | 14th, 4 a.m. | 28·805 | ·416 |
| September | 55·0 | 5th, 2 p.m. | 68·5 | 24th, ? | 35·6* | ·528 | 10th, 9 p.m. | 29·869 | 15th, 4 p.m. | ·835 | ·362 |
| October | 49·7 | 5th, 2 p.m. | 66·5 | 29th, 11 p.m. | 33·0 | ·308 | 2nd, 8 a.m. | 29·909 | **10th, 9 a.m.** | **·536** | ·297 |
| November | 37·5 | 18th, 2 p.m. | 47·7 | 26th, Midnt. | 27·1 | ·386 | 19th, 6 p.m.<br>9 p.m. | 30·088 | 10th, 4 p.m.<br>5 p.m. | ·720 | ·186 |
| December | 30·8 | 31st, 2 p.m. | 49·3 | **25th, 4 a.m.<br>6 a.m.** | **13·0** | 29·292 | 4th, 3 a.m. | 29·953 | 18th, 6 p.m. | 28·583 | ·138 |
| Annual | 47·5 | — | — | — | — | 29·497 | — | — | — | — | ·280 |

* Corrected reading of Rutherford's Minimum Thermometer.

### KEW.

|  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ° | D. H. | ° | D. H. | ° | ins. | D. H. | ins. | D. H. | ins. | in. |
| January | 40·8 | 21st, 3 p.m.<br>22nd, 2 p.m. | 54·7 | 11th, 10 p.m. | 26·4 | 30·128 | **12th, 10 a.m.** | **30·662** | 25th, 9 a.m. | 29·337 | ·217 |
| February | 42·5 | 17th, 2 p.m. | 57·5 | 8th, 9 a.m. | 25·9 | ·246 | 22nd, 1 a.m. | ·614 | 27th, 8 p.m. | ·621 | ·238 |
| March | 42·8 | 7th, 4 p.m. | 57·1 | 26th, 7 a.m. | 27·5 | 30·036 | 16th, 11 a.m.<br>9 p.m. | ·626 | 29th, 5 a.m. | ·140 | ·204 |
| April | 48·4 | 30th, 1 p.m. | 64·6 | 1st, 6 a.m. | 29·0 | 29·800 | 27th, 9 p.m. | ·196 | 1st, 5 a.m. | ·101 | ·266 |
| May | 55·0 | 10th, 3 p.m. | 71·2 | 21st, 4 a.m. | 39·1 | ·756 | 30th, 10 a.m. | ·128 | 24th, 2 p.m.<br>4 p.m. | ·255 | ·347 |
| June | 60·3 | **26th, 2 p.m.** | **85·6** | 2nd, 3 a.m. | 44·0 | ·906 | 6th, 11 a.m. | ·210* | 11th, 4 p.m. | ·448 | ·394 |
| July | 63·1 | 19th, 2 p.m. | 81·8 | 4th, 4 a.m. | 47·1 | ·999 | 31st, Midnt. | ·335 | 24th, 4 p.m. | ·618 | ·428 |
| August | 62·2 | 5th, 3 p.m. | 77·1 | 26th, 4 a.m. | 51·9 | ·722† | 1st, 1 a.m. | ·335 | 30th, 6 a.m. | ·118 | ·447 |
| September | 56·3 | 7th, 4 p.m. | 71·9 | 24th, 6 a.m. | 37·0 | ·958 | 2nd, Noon | ·271 | 23rd, 3 p.m. | 29·426 | ·374 |
| October | 51·1 | 5th, 2 p.m. | 70·8 | 31st, 6 a.m. | 31·3 | ·748 | 13th, 10 a.m. | ·314 | **26th, 9 a.m.<br>10 a.m.** | **28·989** | ·315 |
| November | 40·0 | 25th, 11 a.m. | 52·4 | 29th, Midnt. | 29·0 | ·716 | 19th, 9 p.m. | ·447 | 15th, 5 p.m. | 29·167 | ·209 |
| December | 33·9 | 30th, Noon | 53·6 | **24th, 10 p.m.** | **14·7** | 29·688 | 24th, 8 p.m. | 30·345 | 19th, 6 a.m. | 29·121 | ·175 |
| Annual | 49·7 | — | — | — | — | 29·892 | — | — | — | — | ·301 |

* Approximate reading, trace faint. † Means for three days are approximate.

# TABLE II.—PART 1.

## FIVE-DAY MEANS of the DRY-BULB and WET-BULB THERMOMETERS, and BAROMETER, from the continuous RECORDS at the SEVEN BRITISH OBSERVATORIES, January to June 1878.

| Five-Day Periods. | THERMOMETERS. | | | | | | | | | | | | | | BAROMETER. | | | | | | | Five-Day Periods. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Valencia. 12 ft. | | Armagh. 4 ft. | | Glasgow. 7 ft. | | Aberdeen. 41 ft. | | Falmouth. 11 ft. | | Stonyhurst. 7 ft. | | Kew. 10 ft. | | Valencia. 23 ft. | Armagh. 207 ft. | Glasgow. 184 ft. | Aberdeen. 88 ft. | Falmouth. 211 ft. | Stonyhurst. 361 ft. | Kew. 34 ft. | |
| | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | | | | | | | | |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ins. | ins. | ins. | ins. | ins. | ins. | ins. | |
| Jan. 1–5 | 49·9 | 49·3 | 45·6 | 45·0 | 43·3 | 42·1 | 40·4 | 38·8 | 48·7 | 47·5 | 43·7 | 42·9 | 43·5 | 42·7 | 30·082 | 29·867 | 29·855 | 29·927 | 29·971 | 29·739 | 30·173 | Jan. 1–5 |
| „ 6–10 | 42·3 | 39·4 | 38·3 | 36·8 | 36·3 | 33·9 | 37·3 | 35·3 | 42·1 | 39·0 | 37·3 | 35·3 | 38·9 | 37·2 | ·196 | 29·894 | 29·819 | 29·887 | 29·859 | ·608 | 29·939 | „ 6–10 |
| „ 11–15 | 48·7 | 46·5 | 43·1 | 41·7 | 40·4 | 39·1 | 37·7 | 36·0 | 44·5 | 41·7 | 40·9 | 39·9 | 40·1 | 38·2 | ·455 | 30·146 | 30·057 | 30·102 | 30·369 | ·991 | 30·478 | „ 11–15 |
| „ 16–20 | 49·3 | 47·3 | 45·1 | 43·8 | 43·8 | 42·1 | 41·5 | 39·4 | 48·2 | 46·3 | 42·6 | 41·2 | 43·1 | 41·2 | 30·323 | 30·043 | 29·978 | 30·025 | 30·227 | ·904 | 30·368 | „ 16–20 |
| „ 21–25 | 47·0 | 44·6 | 38·6 | 37·3 | 35·1 | (33·5) | 35·0 | 32·5 | 46·7 | 44·6 | 40·0 | 38·0 | 43·8 | 41·1 | 29·857 | 29·431 | ·288 | 29·292 | 29·712 | ·205 | 29·732 | „ 21–25 |
| „ 26–30 | 45·6 | 43·9 | 38·6 | 37·6 | 35·9 | 34·4 | 35·0 | 33·3 | 43·4 | 40·9 | 35·2 | 33·2 | 36·3 | 34·7 | 30·034 | 29·785 | 29·761 | 29·861 | 29·874 | 29·618 | 30·010 | „ 26–30 |
| Feb. 31–4 | 42·4 | 40·5 | 38·2 | 36·9 | 36·7 | 35·6 | 39·4 | 37·3 | 39·4 | 37·0 | 35·1 | 33·8 | 37·7 | 36·1 | ·532 | 30·339 | 30·283 | 30·359 | 30·291 | 30·119 | ·443 | Feb. 31–4 |
| „ 5–9 | 47·3 | 45·3 | 41·5 | 39·5 | 42·2 | 40·4 | 42·1 | 40·1 | 43·3 | 40·7 | 36·4 | 35·0 | 34·3 | 33·3 | 30·339 | 30·212 | 30·187 | 30·230 | 30·251 | 30·090 | 30·503 | „ 5–9 |
| „ 10–14 | 47·1 | 45·3 | 39·9 | 39·1 | 37·5 | 36·3 | 39·0 | 36·9 | 47·5 | 46·3 | 37·3 | 35·8 | 41·7 | 40·4 | 29·827 | 29·690 | 29·780 | 29·940 | 29·695 | 29·572 | 29·964 | „ 10–14 |
| „ 15–19 | 50·0 | 47·9 | 45·8 | 44·0 | 45·2 | 43·3 | 43·8 | 41·6 | 48·9 | 47·6 | 45·1 | 43·1 | 46·6 | 44·8 | 29·882 | 29·687 | 29·694 | 29·767 | 29·950 | ·668 | 30·190 | „ 15–19 |
| „ 20–24 | 48·9 | 47·0 | 46·7 | 45·2 | 45·4 | 43·6 | 45·4 | 42·2 | 47·4 | 45·6 | 44·3 | 43·1 | 46·0 | 44·2 | 30·410 | 30·127 | 30·046 | 30·060 | 30·218 | ·958 | 30·391 | „ 20–24 |
| „ 25–1 | 51·4 | 50·2 | 47·8 | 46·6 | 45·7 | 44·1 | 42·6 | 40·7 | 50·1 | 49·2 | 46·6 | 45·4 | 49·1 | 47·2 | 29·759 | 29·499 | 29·451 | 29·514 | 29·767 | ·395 | 29·916 | „ 25–1 |
| March 2–6 | 50·6 | 48·5 | 47·8 | 45·8 | 46·9 | 44·7 | 46·0 | 42·6 | 49·2 | 46·8 | 46·0 | 44·2 | 49·2 | 45·6 | 30·287 | ·904 | ·779 | ·764 | 30·178 | ·757 | 30·251 | March 2–6 |
| „ 7–11 | 50·0 | 48·0 | 46·1 | 43·8 | 42·2 | 39·6 | 38·8 | 35·6 | 48·8 | 46·5 | 42·7 | 40·7 | 46·2 | 42·2 | ·263 | 29·867 | 29·723 | 29·725 | ·037 | 29·629 | ·069 | „ 7–11 |
| „ 12–16 | 47·5 | 45·0 | 40·4 | 38·1 | 38·8 | 35·7 | 38·1 | 35·4 | 44·6 | 41·4 | 38·2 | 34·9 | 39·8 | 35·8 | ·476 | 30·294 | 30·291 | 30·388 | ·255 | 30·085 | ·407 | „ 12–16 |
| „ 17–21 | 49·8 | 47·6 | 46·7 | 44·6 | 46·1 | 43·3 | 47·0 | 42·8 | 47·0 | 43·9 | 45·0 | 43·0 | 46·7 | 43·1 | ·501 | 30·222 | 30·113 | 30·136 | 30·244 | 29·962 | 30·337 | „ 17–21 |
| „ 22–26 | 42·9 | 39·7 | 37·0 | 34·9 | 35·9 | (32·1) | 32·0 | 30·5 | 40·9 | 37·4 | 34·2 | 31·1 | 36·2 | 32·6 | 30·052 | 29·734 | 29·636 | 29·675 | 29·722 | ·429 | 29·785 | „ 22–26 |
| „ 27–31 | 42·7 | 39·8 | 36·0 | 33·5 | 35·2 | 31·0 | 31·2 | 29·2 | 40·4 | 37·7 | 35·0 | 31·6 | 36·7 | 33·8 | 29·639 | ·410 | ·383 | ·457 | ·285 | ·136 | ·431 | „ 27–31 |
| April 1–5 | 43·6 | 40·7 | 39·4 | 37·2 | 40·2 | 37·1 | 36·6 | (34·7) | 43·6 | 40·7 | 39·1 | 36·8 | 40·5 | 37·7 | ·598 | ·281 | ·192 | 29·263 | ·410 | ·059 | ·509 | April 1–5 |
| „ 6–10 | 48·4 | 45·5 | 44·9 | 41·0 | 43·0 | 38·8 | 41·6 | 39·5 | 46·2 | 43·6 | 42·9 | 39·2 | 44·2 | 40·5 | ·802 | ·791 | ·912 | 30·116 | ·637 | ·693 | 29·990 | „ 6–10 |
| „ 11–15 | 52·1 | 50·5 | 50·7 | 48·5 | 48·9 | 46·6 | 47·3 | 45·3 | 50·7 | 49·5 | 51·2 | 47·4 | 50·8 | 47·6 | ·783 | ·667 | ·762 | 29·933 | ·768 | ·610 | 30·006 | „ 11–15 |
| „ 16–20 | 52·0 | 50·2 | 50·8 | 48·8 | 50·6 | 48·5 | 45·8 | 44·9 | 50·9 | 49·6 | 50·2 | 48·4 | 51·5 | 49·3 | ·508 | ·368 | ·425 | ·606 | ·472 | ·267 | 29·673 | „ 16–20 |
| „ 21–25 | 52·1 | 48·9 | 49·7 | 47·0 | 46·9 | 44·6 | 43·8 | 42·8 | 50·6 | 48·4 | 48·5 | 45·7 | 51·7 | 48·9 | ·725 | ·624 | ·704 | ·905 | ·424 | ·409 | ·667 | „ 21–25 |
| „ 26–30 | 52·3 | 49·8 | 49·8 | 46·5 | 48·0 | 43·6 | 42·8 | 41·4 | 50·3 | 48·6 | 48·8 | 44·3 | 51·5 | 47·9 | ·832 | ·742 | ·806 | ·974 | ·709 | ·606 | ·955 | „ 26–30 |
| May 1–5 | 54·2 | 50·9 | (53·5) | (50·0) | 52·1 | 48·5 | 51·1 | 47·2 | 53·2 | 50·9 | 52·9 | 49·9 | 56·0 | 52·7 | ·857 | (·626) | ·614 | ·696 | ·727 | ·502 | ·902 | May 1–5 |
| „ 6–10 | 53·8 | 50·2 | 50·7 | 48·8 | 48·9 | (45·4) | 46·4 | 43·6 | 53·6 | 51·2 | 51·0 | 47·9 | 56·8 | 53·9 | ·528 | ·518 | ·638 | ·858 | ·449 | ·388 | ·695 | „ 6–10 |
| „ 11–15 | 54·3 | 52·1 | 53·4 | 51·4 | 52·9 | 49·8 | 48·8 | 47·3 | 54·9 | 53·0 | 54·5 | 51·2 | 57·5 | 53·9 | ·193 | ·115 | ·219 | ·410 | ·255 | ·092 | ·554 | „ 11–15 |
| „ 16–20 | 53·4 | 50·6 | 51·7 | 49·0 | 51·7 | 48·2 | 50·3 | 46·6 | 54·2 | 52·2 | 53·0 | 49·6 | 57·0 | 53·7 | ·640 | ·392 | ·368 | ·459 | ·655 | ·310 | ·839 | „ 16–20 |
| „ 21–25 | 51·4 | 48·7 | 47·9 | 45·8 | 47·5 | 43·8 | 45·4 | 42·6 | 52·1 | 48·9 | 47·7 | 44·7 | 51·1 | 48·0 | ·677 | ·413 | ·381 | ·470 | ·518 | ·207 | ·632 | „ 21–25 |
| „ 26–30 | 52·4 | 48·8 | 50·2 | 47·8 | 51·6 | 47·8 | 49·5 | 47·0 | 52·8 | 50·3 | 51·8 | 48·4 | 52·4 | 49·7 | ·939 | ·723 | ·690 | ·816 | ·701 | ·513 | ·871 | „ 26–30 |
| June 31–4 | 55·9 | 53·2 | 52·4 | 49·5 | 51·1 | 46·5 | 47·3 | 43·6 | 56·0 | 53·6 | 52·4 | 49·0 | 54·7 | 51·5 | ·882 | ·731 | ·769 | ·916 | ·722 | ·557 | ·922 | June 31–4 |
| „ 5–9 | 56·9 | 54·8 | 54·5 | 52·3 | 53·3 | 50·0 | 50·2 | 47·2 | 57·7 | 55·3 | 55·2 | 52·3 | 58·3 | 54·6 | ·790 | ·607 | ·619 | ·769 | ·714 | ·489 | ·918 | „ 5–9 |
| „ 10–14 | 55·3 | 52·3 | 52·6 | 51·0 | 53·1 | 49·2 | 49·4 | 47·3 | 55·8 | 53·2 | 52·1 | 49·4 | 55·9 | 52·4 | ·652 | ·415 | ·437 | ·582 | ·517 | ·265 | ·710 | „ 10–14 |
| „ 15–19 | 55·3 | 51·7 | 54·6 | 51·8 | 54·9 | 50·6 | 50·3 | 47·5 | 57·0 | 53·6 | 54·4 | 50·6 | 55·6 | 52·6 | ·916 | ·674 | ·655 | ·769 | ·700 | ·489 | 29·852 | „ 15–19 |
| „ 20–24 | 57·4 | 55·0 | 57·8 | 54·6 | 58·9 | 54·0 | 57·9 | 53·9 | 61·3 | 57·8 | 60·2 | 56·3 | 64·6 | 59·3 | ·969 | ·795 | ·823 | 29·942 | ·898 | ·694 | 30·075 | „ 20–24 |
| „ 25–29 | 59·0 | 56·8 | 63·4 | 60·3 | 67·3 | 61·2 | 62·3 | 58·5 | 63·6 | 60·4 | 69·6 | 62·8 | 71·1 | 64·1 | 29·928 | 29·789 | 29·857 | 30·026 | 29·774 | 29·673 | 29·998 | „ 25–29 |

NOTE.—Means which are enclosed in brackets are a little doubtful, one of the five daily means being approximate.

## TABLE II.—PART 2.

## FIVE-DAY MEANS of the DRY-BULB and WET-BULB THERMOMETERS, and BAROMETER, from the continuous RECORDS at the SEVEN BRITISH OBSERVATORIES, July to December 1878.

| Five-Day Periods. | THERMOMETERS. | | | | | | | | | | | | | | BAROMETER. | | | | | | | Five-Day Periods. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Valencia. 12 ft. | | Armagh. 4 ft. | | Glasgow. 7 ft. | | Aberdeen. 41 ft. | | Falmouth. 11 ft. | | Stonyhurst. 7 ft. | | Kew. 10 ft. | | Valencia. 23 ft. | Armagh. 207 ft. | Glasgow. 184 ft. | Aberdeen. 88 ft. | Falmouth. 211 ft. | Stonyhurst. 381 ft. | Kew. 34 ft. | |
| | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | | | | | | | | |
| | | | | | | | | | | | | | | | ins. | ins. | ins. | ins. | ins. | ins. | ins. | |
| June 30–4 | 60°·2 | 57°·5 | 58°·8 | 55°·3 | 57°·5 | 52°·0 | 52°·6 | 48°·7 | 59°·8 | 56°·3 | 56°·5 | 51°·8 | 58°·7 | 55°·1 | 29·966 | 29·786 | 29·770 | 29·883 | 29·770 | 29·580 | 29·909 | June 30–4 |
| July 5–9 | 60·4 | 58·7 | 60·6 | 57·6 | 58·7 | 55·4 | 58·8 | 54·8 | 61·8 | 59·2 | 60·1 | 57·0 | 63·3 | 58·6 | 30·060 | ·780 | ·701 | ·744 | ·910 | ·599 | 30·016 | July 5–9 |
| ,, 10–14 | 59·6 | 56·8 | 57·1 | 54·2 | 57·9 | 53·4 | 56·5 | 52·2 | 60·2 | 57·0 | 57·0 | 54·1 | 60·6 | 55·8 | ·073 | 29·802 | 29·701 | 29·767 | 29·824 | ·546 | 29·925 | ,, 10–14 |
| ,, 15–19 | 64·2 | 61·7 | 63·8 | 61·5 | 62·1 | 58·7 | 63·8 | 59·1 | 65·5 | 61·2 | 63·8 | 60·7 | 67·5 | 62·1 | 30·338 | 30·113 | 30·048 | 30·085 | 30·080 | ·894 | 30·235 | ,, 15–19 |
| ,, 20–24 | 66·3 | 62·8 | 63·8 | 60·9 | 62·3 | 58·5 | 58·0 | 56·2 | 66·8 | 63·2 | 67·2 | 62·3 | 67·7 | 63·4 | 29·971 | 29·787 | 29·806 | 29·965 | 29·719 | ·609 | 29·923 | ,, 20–24 |
| ,, 25–29 | 60·6 | 57·7 | 57·3 | 54·0 | 59·4 | 54·2 | 56·2 | 52·8 | 61·7 | 57·6 | 58·8 | 55·1 | 61·4 | 57·6 | 29·926 | 29·733 | 29·683 | 29·799 | ·726 | ·493 | 29·847 | ,, 25–29 |
| Aug. 30–3 | 64·2 | 59·1 | 60·2 | 56·2 | 60·6 | 55·0 | 55·3 | 52·5 | 61·4 | 57·6 | 60·0 | 55·6 | 60·3 | 56·0 | 30·099 | 30·002 | 30·043 | 30·211 | ·853 | ·791 | 30·058 | Aug. 30–3 |
| ,, 4–8 | 62·4 | 60·0 | 61·2 | 58·9 | 62·1 | 58·7 | 59·4 | 58·0 | 63·7 | 60·7 | 61·8 | 59·0 | 65·0 | 61·0 | 29·766 | 29·592 | 29·625 | 29·807 | ·626 | ·435 | 29·818 | ,, 4–8 |
| ,, 9–13 | 61·3 | 58·7 | 59·4 | 56·6 | 58·5 | 55·0 | 59·0 | 55·4 | 62·6 | 60·0 | 59·9 | 56·6 | 63·3 | 59·6 | ·621 | ·390 | ·371 | ·486 | ·542 | ·288 | ·746† | ,, 9–13 |
| ,, 14–18 | 60·4 | 57·5 | 58·6 | 56·3 | 56·1 | 52·9 | 54·7 | 52·3 | 60·9 | 57·5 | 59·1 | 56·3 | 62·0 | 58·2 | ·690 | ·407 | ·357 | ·477 | ·531 | ·223 | ·647 | ,, 14–18 |
| ,, 19–23 | 60·1 | 57·6 | 58·7 | 55·6 | 56·8 | 53·3 | 54·0 | 51·3 | 61·7 | 59·2 | 58·0 | 54·0 | 61·0 | 57·6 | ·712 | ·679 | ·750 | ·925 | ·565 | ·534 | ·820 | ,, 19–23 |
| ,, 24–28 | 60·0 | 57·8 | 59·3 | 56·7 | 59·2 | 56·3 | 57·5 | 56·5 | 62·0 | 59·4 | 59·4 | 56·7 | 61·3 | 59·2 | ·488 | ·325 | ·339 | ·485 | ·384 | ·163 | ·555 | ,, 24–28 |
| Sept. 29–2 | 59·9 | 57·3 | 57·1 | 55·3 | 58·3 | 54·9 | 56·4 | 54·7 | 60·4 | 57·4 | 58·5 | 56·0 | 60·5 | 57·4 | 29·860 | ·609 | ·568 | ·695 | ·646 | ·378 | 29·778 | Sept. 29–2 |
| ,, 3–7 | 61·7 | 59·8 | 60·4 | 58·3 | 60·0 | 57·4 | 59·5 | 56·9 | 62·1 | 59·7 | 61·1 | 58·9 | 61·5 | 59·0 | 30·024* | ·849 | ·834 | ·942 | (·896) | ·707 | 30·088 | ,, 3–7 |
| ,, 8–12 | 60·2 | 57·1 | (58·4) | (55·1) | 57·5 | 53·5 | 56·9 | 53·0 | 61·6 | 58·9 | 56·8 | 53·7 | 58·8 | 56·1 | 30·156 | ·905 | ·841 | ·915 | (·973) | ·727 | 30·101 | ,, 8–12 |
| ,, 13–17 | 58·8 | 56·2 | 56·3 | 53·7 | 55·6 | 52·3 | 56·5 | 51·4 | 59·2 | 55·3 | 55·2 | 52·6 | 56·9 | 53·2 | 29·878 | ·507 | ·373 | ·371 | ·810 | ·396 | 29·910 | ,, 13–17 |
| ,, 18–22 | 54·0 | 50·3 | 49·5 | 47·4 | 49·1 | 45·9 | 50·6 | 46·2 | 55·5 | 51·9 | 49·8 | 46·8 | 52·5 | 49·7 | ·891 | ·585 | ·504 | ·576 | ·739 | ·419 | ·881 | ,, 18–22 |
| ,, 23–27 | 55·5 | 52·9 | 50·6 | 49·2 | 49·8 | 47·2 | 51·5 | 48·2 | 54·8 | 51·8 | 50·0 | 47·9 | 50·5 | 48·4 | ·823 | ·519 | ·449 | ·542 | ·630 | ·323 | 29·756 | ,, 23–27 |
| Oct. 28–2 | 55·9 | 54·1 | 53·5 | 52·3 | 48·6 | 46·3 | 46·6 | 44·1 | 57·1 | 54·9 | 52·0 | 50·6 | 55·0 | 52·5 | ·987 | ·780 | ·796 | ·935 | ·848 | ·614 | 30·012 | Oct. 28–2 |
| ,, 3–7 | 59·1 | 57·4 | 58·4 | 56·2 | 56·9 | 54·7 | 53·8 | 52·4 | 59·3 | 57·4 | 57·9 | 55·7 | 57·8 | 54·9 | ·562 | ·500 | ·573 | ·733 | ·615 | ·476 | 29·924 | ,, 3–7 |
| ,, 8–12 | 54·5 | 51·6 | (52·8) | (50·8) | 53·7 | 51·1 | 53·7 | 51·1 | 55·1 | 52·0 | 53·8 | 51·0 | 54·8 | 51·6 | ·487 | ·189 | ·157 | ·260 | ·498 | ·136 | 29·683 | ,, 8–12 |
| ,, 13–17 | 55·5 | 53·6 | 53·7 | 51·0 | 53·1 | 49·6 | 52·9 | 50·8 | 55·5 | 52·4 | 50·9 | 48·6 | 50·7 | 48·9 | ·824 | ·721 | ·780 | ·922 | ·783 | ·680 | 30·061 | ,, 13–17 |
| ,, 18–22 | 53·8 | 51·3 | 50·2 | 48·8 | 50·1 | 47·7 | 50·2 | 48·7 | 55·1 | 53·3 | 50·6 | 48·5 | 53·1 | 51·0 | ·458 | ·244 | 29·248 | ·384 | ·378 | 29·163 | 29·582 | ,, 18–22 |
| ,, 23–27 | 48·8 | 45·6 | 43·3 | 42·1 | 44·0 | 41·8 | 43·4 | 41·2 | 49·8 | 47·1 | 44·3 | 42·3 | 46·7 | 44·5 | 29·431 | ·064 | 28·969 | ·025 | ·233 | 28·870 | ·339 | ,, 23–27 |
| Nov. 28–1 | 45·0 | 42·0 | 39·1 | 37·9 | 40·4 | 36·8 | 39·9 | 38·0 | 45·4 | 42·1 | 40·2 | 37·2 | 41·2 | 39·2 | 30·129 | ·767 | 29·629 | ·659 | ·758 | 29·410 | ·782 | Nov. 28–1 |
| ,, 2–6 | 46·0 | 43·2 | 41·2 | 39·6 | 40·6 | 37·5 | 40·0 | 38·3 | 44·6 | 41·7 | 38·9 | 36·0 | 39·6 | 37·4 | 30·157 | ·880 | ·813 | ·870 | ·794 | ·562 | ·864 | ,, 2–6 |
| ,, 7–11 | 45·6 | 42·7 | 38·2 | 37·0 | 38·0 | 35·5 | 36·4 | 34·6 | 45·1 | 41·9 | 38·3 | 36·3 | 40·8 | 38·6 | 29·828 | ·438 | ·336 | ·385 | ·598 | ·180 | ·632 | ,, 7–11 |
| ,, 12–16 | 42·6 | 39·4 | 37·6 | 36·3 | 40·1 | 36·4 | 40·0 | 38·2 | 42·3 | 39·6 | 38·9 | 36·0 | 39·4 | 37·6 | 29·812 | 29·471 | ·378 | 29·434 | ·329 | ·067 | 29·348 | ,, 12–16 |
| ,, 17–21 | 45·4 | 42·9 | 37·9 | 37·0 | 40·1 | 38·2 | 41·3 | 39·5 | 42·0 | 39·5 | 37·7 | 36·3 | 41·3 | 39·2 | 30·209 | 30·002 | ·970 | 30·044 | ·935 | ·773 | 30·061 | ,, 17–21 |
| ,, 22–26 | 41·5 | 39·5 | 34·8 | 33·9 | 37·2 | 36·1 | 39·1 | 37·2 | 44·8 | 42·8 | 35·3 | 34·7 | 40·9 | 39·5 | 29·639 | 29·470 | ·469 | 29·601 | ·409 | ·279 | 29·652 | ,, 22–26 |
| Dec. 27–1 | 43·0 | 41·1 | 36·2 | 35·4 | 35·6 | 33·9 | 36·4 | 34·5 | 41·8 | 39·4 | 35·8 | 34·0 | 37·0 | 35·8 | 29·954 | 29·669 | ·638 | 29·756 | ·577 | ·394 | 29·696 | Dec. 27–1 |
| ,, 2–6 | 41·9 | 40·2 | 34·7 | 33·9 | 35·5 | 33·9 | 35·0 | 33·7 | 40·0 | 37·3 | 35·1 | 33·1 | 36·8 | 35·0 | 30·271 | 30·018 | ·970 | 30·046 | ·966 | ·745 | 30·059 | ,, 2–6 |
| ,, 7–11 | 37·9 | (35·8) | 28·6 | 27·7 | 32·0 | 29·6 | 31·5 | 30·8 | 33·9 | 32·1 | 29·9 | 28·0 | 31·6 | 30·5 | (29·891) | 29·641 | ·599 | 29·683 | ·539 | ·352 | 29·675 | ,, 7–11 |
| ,, 12–16 | 34·1 | 33·1* | 26·1 | 25·5 | 24·4† | 24·0† | 27·8 | 26·9 | 35·9 | 34·2 | 24·7 | 24·1 | 28·6 | 28·1 | ·619 | ·418 | ·382 | ·451 | ·385 | ·227 | ·618 | ,, 12–16 |
| ,, 17–21 | 35·9 | 34·5 | 29·6 | 28·8 | 28·8* | 27·4* | 30·8 | 29·5 | 37·0 | 35·1 | 27·3 | 26·2 | 31·2 | 30·4 | ·612 | ·275 | ·170 | ·237 | ·357 | ·011 | ·454 | ,, 17–21 |
| ,, 22–26 | 37·6 | 35·9 | 25·2 | 24·5 | 27·0 | 25·7 | 29·8 | 28·8 | 40·2 | 38·3 | 25·7 | 24·6 | 28·8 | 28·2 | ·819 | ·693 | ·661 | ·731 | ·627 | 29·466 | ·859 | ,, 22–26 |
| ,, 27–31 | 46·7 | 44·8 | 39·8 | 38·8 | 37·6 | (36·5) | 36·4 | 35·4 | 48·5 | 46·9 | 40·1 | 38·8 | 45·8 | 44·4 | 29·228 | 29·006 | 29·011 | 29·115 | 29·261 | 28·939 | 29·458 | ,, 27–31 |

NOTE.—Means which are enclosed in brackets are a little doubtful, one of the five daily means being approximate.

* Two of the five daily means are approximate.

† Three of the five daily means are approximate.

# APPENDIX I. A.

TABLE I.—MEAN MONTHLY RESULTS from the continuous RECORDS at the SEVEN BRITISH OBSERVATORIES for the Year 1878. In millimetres and degrees centigrade.

## VALENCIA.

| 1878. Months. | Thermometer. | | | | | Barometer. | | | | | Vapour Tension. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Means. | Extremes. | | | | Means. | Extremes. | | | | |
| | | Maximum. | | Minimum. | | | Maximum. | | Minimum. | | |
| | | Day. | Ther. | Day. | Ther. | | Day. | Bar. | Day. | Bar. | |
| | ° C. | D. H. | ° C. | D. H. | ° C. | mm. | D. H. | mm. | D. H. | mm. | mm. |
| January - - | 8·33 | 21st, 11 a.m. | 12·83 | 10th, 2 a.m. | 0·06 | 766·28 | 31st, Midt. | 778·24 | 24th, 1 p.m. | 750·76 | 7·03 |
| February - - | 8·78 | 28th, 2 p.m. | 12·89 | 2nd, 6 a.m. | 0·78 | 65·37 | 21st, 8 p.m. | 78·95 | 27th, 9 a.m. | 48·30 | 7·26 |
| March - - | 8·56 | 20th, 3 p.m. | 13·28 | 30th, 8 a.m. | 2·11 | 66·56 | **17th, 10 a.m.** | **79·36** | 31st, 9 p.m. | 43·39 | 6·85 |
| April - - | 10·06 | 25th, 5 p.m. | 17·44 | 1st, 6 a.m. | 2·00 | 54·57 | 26th, Midt. | 66·23 | 19th, 5 p.m. | 42·81 | 7·59 |
| May - - | 11·83 | 30th, 3 p.m. | 17·67 | 8th, 5 a.m. | 6·61 | 53·15 | 29th, 9 p.m. | 67·15 | 15th, 4 a.m. | 36·99 | 8·20 |
| June - - | 13·83 | 30th, 4 p.m. | 20·56 | 1st, 5 a.m. | 7·67 | 58·15 | 6th, 1 a.m. | 65·83 | 11th, 7 a.m. | 43·54 | 9·75 |
| July - - | 16·67 | **22nd, 6 p.m.** | **26·72** | 25th, 5 a.m. | 11·00 | 63·84 | 18th, 9 a.m. | 72·63 | 25th, 4 p.m. | 55·72 | 11·73 |
| August - - | 16·17 | 1st, 1 p.m. | 23·50 | 21st, 5 a.m. | 11·50 | 54·14 | 1st, 1 a.m. | 68·37 | 27th, 9 p.m. | 44·18 | 11·35 |
| September - | 14·50 | 4th, 3 p.m. | 20·56 | 23rd, 1 a.m.<br>1 p.m. | 8·61 | 61·00† | 12th, 10 p.m. | 69·99 | 15th, 11 a.m. | 45·83 | 10·24 |
| October - - | 11·78 | 4th, 2 p.m. | 18·11 | 31st, 3 a.m. | 1·78 | 53·33 | 12th, 1 a.m.<br>4 a.m. | 66·18 | **9th, 8 p.m.** | **23·35** | 8·58 |
| November - | 6·61 | 10th, 1 a.m. | 12·11 | 26th, 2 a.m. | 0·61 | 60·46 | 2nd, 11 p.m. | 73·45 | 10th, 1 p.m. | 45·42 | 5·87 |
| December - | 4·06 | 29th, 11 p.m. | 11·94 | **14th, 7 p.m.** | −2·56 | 755·61* | 4th, 11 a.m. | 772·43 | 29th, 9 p.m. | 733·87 | 5·31 |
| Annual - - | 10·93 | — | — | — | — | 759·37 | — | — | — | — | 8·31 |

* Mean for one day is approximate. † Means for two days are approximate.

## ARMAGH.

| 1878. Months. | Thermometer Means. | Maximum Day. | Maximum Ther. | Minimum Day. | Minimum Ther. | Barometer Means. | Maximum Day. | Maximum Bar. | Minimum Day. | Minimum Bar. | Vapour Tension. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ° C. | D. H. | ° C. | D. H. | ° C. | mm. | D. H. | mm. | D. H. | mm. | mm. |
| January - - | 5·17 | 21st, 3 a.m. | 11·89 | 25th, 10 a.m. | −2·39 | 758·88 | 31st, 10 p.m. | 773·62 | 25th, 2 a.m. | 742·86 | 5·99 |
| February - - | 6·33 | 27th, 2 p.m. | 12.78 | 1st, 7 a.m. | −0·61 | 60·34 | 1st, 1 a.m. | 73·39 | 27th, 4 p.m. | 42·73 | 6·32 |
| March - - | 5·89 | 21st, Noon | 11·83 | 28th, 6 a.m. | −0·89 | 59·02 | **16th, 10 a.m.** | **74·10** | 31st, Midnt. | 37·40 | 5·76 |
| April - - | 8·67 | 15th, ? | 15·78† | 1st, 2 a.m. | −0·94 | 51·29 | 27th, 1 a.m.<br>7 a.m. | 62·32 | 1st, 2 p.m.<br>5 p.m. | 34·48 | 6·73 |
| May - - | 10·67* | 18th, 2 p.m.? | 17·22 | 21st, 2 a.m. | 4·44 | 48·70* | 29th, 11 p.m. | 62·90 | 15th, 11 a.m. | 32·06 | 7·97 |
| June - - | 13·50 | **28th, 4p.m.** | **24·56** | 1st, 4 a.m. | 4·28 | 53·45 | 6th, 7 a.m. | 61·58 | 11th, 5 p.m. | 36·21 | 9·62 |
| July - - | 15·61 | 22nd, 6 p.m. | 24·11 | 29th, 5 a.m. | 8·22 | 58·31 | 18th, 11 a.m. | 67·37 | 24th, 3 a.m. | 48·83 | 10·71 |
| August - - | 15·17 | 1st, 3 p.m. | 22·22 | 17th, 2 a.m. | 8·89 | 49·69 | 1st, 1 a.m. | 66·00 | 14th, 2 a.m. | 37·55 | 10·74 |
| September - | 13·00* | 5th, 3 p.m. | 20·56 | 23rd, 7 a.m. | 4·39 | 54·11 | 12th, 11 p.m. | 63·03 | 15th, 11 a.m. | 34·63 | 9·57 |
| October - - | 9·94* | 6th, 2 p.m. | 18·28 | 30th, 1 a.m. | 0·78 | 47·48 | 1st, Midnt. | 62·78 | **10th, 5 a.m.** | **21·32** | 7·95 |
| November - | 3·11 | 9th, 11 p.m. | 8·78 | 12th, 7 a.m. | −3·22 | 53·48 | 19th, Midnt. | 67·15 | 10th, 2 p.m. | 35·35 | 5·13 |
| December - | −0·56 | 31st, 2 a.m. | 9·50 | **25th, 2 a.m.** | **−14·00** | 749·64 | 4th, 9 a.m. | 766·43 | 30th, 2 a.m. | 729·17 | 3·89 |
| Annual - - | 8·88 | — | — | — | — | 753·70 | — | — | — | — | 7·53 |

* Mean for one day is approximate. † Corrected reading of Phillips' maximum thermometer.

## Table I.—Mean Monthly Results, &c.—*continued.*

### GLASGOW.

| 1878.<br>Months. | Thermometer. | | | | | Barometer. | | | | | Vapour Tension. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Means. | Extremes. | | | | Means. | Extremes. | | | | |
| | | Maximum. | | Minimum. | | | Maximum. | | Minimum. | | |
| | | Day. | Ther. | Day. | Ther. | | Day. | Bar. | Day. | Bar. | |
| | ° C. | D. H. | ° C. | D. H. | ° C. | mm. | D. H. | mm. | D. H. | mm. | mm. |
| January - - | 3·89 | 21st, 2 a.m. | 9·89 | 11th, 8 a.m. | −6·28 | 757·21 | 31st, 9 p.m.<br>10 p.m. | 772·48 | 23rd, 4 p.m. | 734·94 | 5·26 |
| February - - | 5·67 | 17th, 7 p.m.<br>27th, 2 p.m. | 11·17 | 3rd, 6 a.m. | −2·28 | 59·88 | 1st, 1 a.m. | 71·97 | 28th, 3 p.m. | 42·17 | 5·97 |
| March - - | 5·06 | 19th, 1 p.m.<br>2 p.m. | 11·94 | 28th, 6 a.m. | −2·61 | 56·91 | **16th, 10a.m.** | **73·67** | 31st, Midt. | 33·21 | 4·97 |
| April - - | 7·94 | 29th, 4 p.m. | 17·72 | 5th, 6 a.m. | −0·83 | 52·69 | 26th, Midt.<br>27th, 8 a.m.<br>and 9 a.m. | 63·15 | 1st, 4 p.m. | 28·54 | 6·22 |
| May - - | 10·50 | 5th, 4 p.m. | 19·11 | 21st, 7 a.m. | 2·50 | 49·18 | 29th, 10 p.m. | 61·12 | 15th, 3 p.m.<br>4 p.m. | 34·58 | 7·21 |
| June - - | 13·72 | **27th, ?** | **29·39*** | 5th, 3 a.m. | 4·72 | 54·14 | 6th, 10 a.m. | 61·40 | 11th, 11 p.m. | 38·29 | 8·53 |
| July - - | 15·33 | 21st, 5 p.m. | 26·06 | 14th, 4 a.m.<br>31st, 5 a.m. | 9·17 | 57·09 | 31st, 7 a.m.<br>and 8 a.m. | 66·76 | 25th, 3 p.m. | 47·99 | 9·68 |
| August - - | 14·89 | 1st, 3 p.m. | 24·00 | 17th, 5 a.m. | 6·44 | 49·97 | 1st, 1 a.m.<br>2 a.m. | 66·30 | 12th, 5 a.m.<br>13th, 3 a.m. | 37·43 | 9·93 |
| September - | 12·33 | 8th, 3 p.m. | 20·33 | 26th, 2 a.m. | 5·28 | 52·51 | 10th, Noon | 61·35‡ | 15th, Noon | 30·44 | 8·56 |
| October - - | 9·89 | 5th, 4 p.m. | 17·28 | 31st, 10 p.m. | 0·11 | 47·03 | 2nd, 5 a.m. | 63·13 | **10th, 1 p.m.** | **24·98** | 7·31 |
| November - | 3·67 | 10th, 1 p.m. | 8·33 | 29th, 2 a.m. | −2·89 | 52·11 | 19th, 11 a.m.<br>Noon | 66·30 | 10th, 3 p.m. | 32·24 | 4·80 |
| December - | −0·44§ | 31st, 6 a.m. | 8·83 | **20th, ?** | **−11·17†** | 748·52 | 4th, 1 a.m. | 766·15 | 31st, 5 p.m. | 726·63 | 3·58 |
| Annual - - | 8·54 | — | — | — | — | 753·10 | — | — | — | — | 6·84 |

* Corrected reading of Phillips' maximum thermometer.
† Corrected reading of Rutherford's minimum thermometer.
‡ Approximate reading, trace faint.
§ Means for five days are approximate.

### ABERDEEN.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ° C. | D. H. | ° C. | D. H. | ° C. | mm. | D. H. | mm. | D. H. | mm. | mm. |
| January - - | 3·17 | 16th, 5 a.m. | 11·11 | 25th, 5 a.m. | −4·44 | 758·66 | 31st, 11 a.m. | 774·02 | 23rd. 4 p.m. | 731·84 | 4·80 |
| February - - | 5·72 | 22nd, 3 p.m. | 13·28 | 19th, 7 a.m. | 0·50 | 61·71 | 1st, 1 a.m, | 73·31 | 28th, 4 p.m. | 44·24 | 5·63 |
| March - - | 3·94 | 20th, 2 p.m. | 12·44 | 28th, 7 a.m. | −5·56 | 57·85 | **16th, 8 a.m.** | **76·26** | 31st, Midnt. | 30·69 | 4·70 |
| April - - | 6·11 | 16th, 2 p.m. | 16·44 | 1st, 6 a.m.<br>2nd, 4 a.m. | −1·17 | 56·88 | 11th, Midnt. | 68·21 | 1st, 5 a.m. | 26·76 | 6·14 |
| May - - | 9·17 | 5th, 11 a.m. | 17·44 | 20th, 7 a.m. | 2·22 | 52·56 | 29th, 10 p.m. | 63·99 | 15th, 7 p.m. | 38·97 | 6·90 |
| June - - | 11·78 | 26th, 1 p.m. | 23·89 | 15th, 3 a.m. | 2·78 | 57·75 | 6th, 2 p.m. | 65·23 | 9th, 7 a.m. | 42·25 | 8·12 |
| July - - | 14·17 | **18th, 4 p.m.** | **25·83** | 4th, 3 a.m. | 4·39 | 59·37 | 31st, 11 p.m. | 69·91 | 6th, 4 a.m. | 49·82 | 9·32 |
| August - - | 13·83 | 12th, 2 p.m. | 21·50 | 20th, 5 a.m. | 6·61 | 53·80 | 1st, 1 a.m. | 69·84 | 13th, 7 a.m. | 37·17 | 10·10 |
| September - | 12·39 | 3rd, 3 p.m. | 21·61 | 26th, 5 a.m. | 3·89 | 54·60 | 2nd, 7 a.m. | 64·05 | 15th, Midnt. | 27·88 | 8·25 |
| October - - | 9·39 | 3rd, 1 p.m. | 17·22 | 29th, 6 p.m. | 0·78 | 49·69 | 2nd, 5 a.m.<br>6 a.m. | 65·85 | 21st, 9 p.m. | 26·58 | 7·59 |
| November - | 3·89 | 21st, 2 p.m. | 9·50 | 29th, 6 a.m. | −1·94 | 54·14 | 18th, 11 p.m. | 67·91 | 10th, 10 p.m. | 32·81 | 5·11 |
| December - | 0·06 | 31st, 6 p.m. | 7·56 | **13th, 7 p.m.** | **−8·72** | 750·53 | 3rd, 7 p.m.<br>8 p.m. | 768·64 | **31st, 7 p.m.** | **725·76** | 4·04 |
| Annual - - | 7·80 | — | — | — | — | 755·63 | — | — | — | — | 6·73 |

## Table I.—Mean Monthly Results, &c.—*continued.*

### FALMOUTH.

| 1878. MONTHS. | THERMOMETER. | | | | | BAROMETER. | | | | | VAPOUR TENSION. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Means. | Extremes. | | | | Means. | Extremes. | | | | |
| | | Maximum. | | Minimum. | | | Maximum. | | Minimum. | | |
| | | Day. | Ther. | Day. | Ther. | | Day. | Bar. | Day. | Bar. | |
| | ° C. | D. H. | ° C. | D. H. | ° C. | mm. | D. H. | mm. | D. H. | mm. | mm. |
| January - - | 7·39 | 21st, Noon | 11·83 | 25th, 2 p.m. | 0·00 | 762·29 | 12th, 10 a.m. | 774·12 | 24th, 4 p.m. | 742·94 | 6·35 |
| February - - | 7·89 | 17th, Noon | 12·33 | 1st, 6 a.m. | −0·67 | 62·90 | **21st, 9 p.m.** | **74·15** | 27th, 3 p.m. | 47·48 | 6·90 |
| March - - | 7·44 | 7th, 11 a.m.<br>2 p.m. | 12·61 | 30th, 10 a.m. | 0·00 | 60·46 | 5th, 10 a.m.<br>11 a.m. | 73·50 | **29th, 4 a.m.** | **31·59** | 6·14 |
| April - - | 9·28 | 25th, 3 p.m. | 15·78 | 6th, 6 a.m. | 2·89 | 51·06 | 27th, 1 p.m. | 61·61 | 1st, 1 a.m. | 36·46 | 7·51 |
| May - - | 11·94 | 17th, 11 a.m.<br>1 p.m. | 15·94 | 21st, 4 a.m. | 6·56 | 50·76 | 4th, 11 a.m. | 60·72 | 15th, 8 a.m. | 36·92 | 8·71 |
| June - - | 14·83 | 27th, 10 a.m.<br>1 p.m. | 22·11 | 1st, 5 a.m. | 9·78 | 54·80 | 6th, 10 a.m.<br>11 a.m. | 63·36 | 11th, 11 a.m. | 40·22 | 10·31 |
| July - - | 17·06 | **22nd, 3 p.m.** | **25·44** | 3rd, 1 a.m. | 12·17 | 58·33 | 18th, 11 a.m. | 65·95 | 24th, 4 a.m. | 50·40 | 11·43 |
| August - - | 16·61 | 8th, 2 p.m. | 22·44 | 4th, 6 a.m. | 12·11 | 50·20 | 1st, 1 a.m. | 63·54 | 29th, 10 p.m. | 35·52 | 11·68 |
| September - | 14·83 | 6th, 2 p.m. | 20·83 | 24th, 6 a.m. | 9·28 | 57·41* | 2nd, 10 a.m.<br>11 a.m. | 64·58 | 23rd, 4 a.m.<br>5 a.m. | 44·05 | 10·19 |
| October - - | 12·11 | 5th, 1 p.m. | 17·44 | 31st, Midnt. | 4·33 | 50·84 | 12th, 10 a.m. | 64·42 | 7th, 7 p.m. | 31·66 | 8·68 |
| November - | 6·33 | 24th, 3 p.m. | 11·94 | 12th, 4 p.m. | 0·44 | 52·18 | 19th, 9 p.m. | 68·18 | 12th, Noon | 36·94 | 5·68 |
| December - | 4·11 | 30th, 5 a.m. | 11·89 | **11th, 9 a.m.** | **−4·44** | 749·94 | 4th, 11 a.m. | 765·80 | 28th, 7 p.m. | 737·96 | 5·21 |
| Annual - - | 10·82 | — | — | — | — | 755·10 | — | — | — | — | 8·23 |

* Means for two days are approximate.

### STONYHURST.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ° C. | D. H. | ° C. | D. H. | ° C. | mm. | D. H. | mm. | D. H. | mm. | mm. |
| January - - | 4·28 | 21st, 5 a.m. | 11·33 | 30th, 5 a.m.<br>8 a.m. | −3·33 | 754·19 | 31st, 10 p.m. | 768·44 | 25th, 5 a.m. | 733·59 | 5·43 |
| February - - | 4·83 | 17th, 3 p.m. | 13·67 | 1st, 6 a.m. | −3·33 | 57·21 | 1st, 1 a.m.<br>3 a.m. | 67·98 | 27th, 6 p.m. | 41·46 | 5·68 |
| March - - | 4·72 | 19th, 1 p.m. | 12·22 | 24th, 6 a.m. | −3·44 | 53·04 | **16th, 11 a.m.** | **69·28** | 31st, Midnt. | 30·54 | 5·08 |
| April - - | 8·22 | 29th, 3 p.m. | 17·22 | 5th, 3 a.m. | −0·56 | 47·79 | 27th, 7 a.m. | 57·85 | 1st, 3 p.m. | 27·49 | 6·29 |
| May - - | 11·06 | 5th, 4 p.m.<br>12th, 3 p.m. | 18·89 | 21st, 3 a.m. | 2·83 | 45·35 | 29th, Midnt. | 56·85 | 15th, 1 p.m. | 32·52 | 7·70 |
| June - - | 14·22 | **27th, 2 p.m.** | **28·67** | 14th, 4 a.m. | 4·44 | 49·89 | 22nd, 7 a.m. | 57·14 | 11th, 6 p.m. | 32·96 | 9·19 |
| July - - | 15·83 | 21st, 4 p.m. | 28·39 | 2nd, 4 a.m. | 7·33 | 52·92 | 31st, 10 a.m. | 62·47 | 25th, 5 a.m. | 43·22 | 10·39 |
| August - - | 15·39 | 1st, 3 p.m. | 22·67 | 26th, 5 a.m. | 7·89 | 45·37 | 1st, 1 a.m. | 62·14 | 14th, 4 a.m. | 31·64 | 10·56 |
| September - | 12·78 | 5th, 2 p.m. | 20·28 | 24th, ? | 2·00* | 49·99 | 10th, 9 p.m. | 58·66 | 15th, 4 p.m. | 32·40 | 9·19 |
| October - - | 9·83 | 5th, 2 p.m. | 19·17 | 29th, 11 p.m. | 0·56 | 44·41 | 2nd, 8 a.m. | 59·68 | **10th, 9 a.m.** | **24·80** | 7·54 |
| November - | 3·06 | 18th, 2 p.m. | 8·72 | 26th, Midnt. | −2·72 | 46·39 | 19th, 6 p.m.<br>9 p.m. | 64·22 | 10th, 4 p.m.<br>5 p.m. | 29·47 | 4·72 |
| December - | −0·67 | 31st, 2 p.m. | 9·61 | **25th, 4 a.m.<br>6 a.m.** | **−10·56** | 744·00 | 4th, 3 a.m. | 760·80 | 18th, 6 p.m. | 726·00 | 3·50 |
| Annual - - | 8·63 | - | — | — | — | 749·21 | — | — | — | — | 7·11 |

* Corrected reading of Rutherford's Minimum Thermometer.

## Table I.—Mean Monthly Results, &c.—*continued.*

### KEW.

| 1878. Months. | Thermometer. | | | | | Barometer. | | | | | Vapour Tension. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Means. | Extremes. | | | | Means. | Extremes. | | | | |
| | | Maximum. | | Minimum. | | | Maximum. | | Minimum. | | |
| | | Day. | Ther. | Day. | Ther. | | Day. | Bar. | Day. | Bar. | |
| | ° C. | D. H. | ° C. | D. H. | ° C. | mm. | D. H. | mm. | D. H. | mm. | mm. |
| January - - | 4·89 | 21st, 3 p.m.<br>22nd, 2 p.m. | 12·61 | 11th, 10 p.m. | −3·11 | 765·23 | **12th, 10 a.m.** | **778·80** | 25th, 9 a.m. | 745·15 | 5·51 |
| February - - | 5·83 | 17th, 2 p.m. | 14·17 | 8th, 9 a.m. | −3·39 | 68·23 | 22nd, 1 a.m. | 77·58 | 27th, 8 p.m. | 52·36 | 6·04 |
| March - - | 6·00 | 7th, 4 p.m. | 13·94 | 26th, 7 a.m. | −2·50 | 62·90 | 16th, 11 a.m.<br>9 p.m. | 77·88 | 29th, 5 a.m. | 40·14 | 5·18 |
| April - - | 9·11 | 30th, 1 p.m. | 18·11 | 1st, 6 a.m. | −1·67 | 56·91 | 27th, 9 p.m. | 66·96 | 1st, 5 a.m. | 39·16 | 6·75 |
| May - - | 12·78 | 10th, 3 p.m. | 21·78 | 21st, 4 a.m. | 3·94 | 55·79 | 30th, 10 a.m. | 65·23 | 24th, 2 p.m.<br>4 p.m. | 43·07 | 8·81 |
| June - - | 15·72 | **26th, 2 p.m.** | **29·78** | 2nd, 3 a.m. | 6·67 | 59·60 | 6th, 11 a.m. | 67·32* | 11th, 4 p.m. | 47·96 | 10·00 |
| July - - | 17·28 | 19th, 2 p.m. | 27·67 | 4th, 4 a.m. | 8·39 | 61·96 | 31st, Midnt. | 70·50 | 24th, 4 p.m. | 52·28 | 10·86 |
| August - - | 16·78 | 5th, 3 p.m. | 25·06 | 26th, 4 a.m. | 11·06 | 54·92† | 1st, 1 a.m. | 70·50 | 30th, 6 a.m. | 39·58 | 11·35 |
| September - | 13·50 | 7th, 4 p.m. | 22·17 | 24th, 6 a.m. | 2·78 | 60·92 | 2nd, Noon | 68·87 | 23rd, 3 p.m. | 47·40 | 9·49 |
| October - - | 10·61 | 5th, 2 p.m. | 21·56 | 31st, 6 a.m. | −0·39 | 55·58 | 13th, 10 a.m. | 69·96 | **26th, 9 a.m.<br>10 a.m.** | **36·31** | 8·00 |
| November - | 4·44 | 25th, 11 a.m. | 11·33 | 29th, Midnt. | −1·67 | 54·77 | 19th, 9 p.m. | 73·34 | 15th, 5 p.m. | 40·83 | 5·31 |
| December - | 1·06 | 30th, Noon | 12·00 | **24th, 10 p.m.** | **−9·61** | 754·06 | 24th, 8 p.m. | 770·75 | 19th, 6 a.m. | 739·66 | 4·44 |
| Annual - - | 9·83 | — | — | — | — | 759·24 | — | — | — | — | 7·65 |

* Approximate reading, trace faint.

† Means for three days are approximate.

# TABLE II.—PART 1.

## FIVE-DAY MEANS of the DRY-BULB and WET-BULB THERMOMETERS, and BAROMETER, from the continuous Records at the SEVEN BRITISH OBSERVATORIES, January to June 1878.

| Five-Day Periods. | THERMOMETERS. | | | | | | | | | | | | | | BAROMETER. | | | | | | | Five-Day Periods. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Valencia. 3·66 m. | | Armagh. 1·22 m. | | Glasgow. 2·13 m. | | Aberdeen. 12·50 m. | | Falmouth. 3·35 m. | | Stonyhurst. 2·13 m. | | Kew. 3·05 m. | | Valencia. 7·01 m. | Armagh. 63·09 m. | Glasgow. 56·08 m. | Aberdeen. 26·82 m. | Falmouth. 64·31 m. | Stonyhurst. 110·03 m. | Kew. 10·36 m. | |
| | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | | | | | | | | |
| | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | mm. | mm. | mm. | mm. | mm. | mm. | mm. | |
| Jan. 1–5 | 9·94 | 9·61 | 7·56 | 7·22 | 6·28 | 5·61 | 4·67 | 3·78 | 9·28 | 8·61 | 6·50 | 6·06 | 6·39 | 5·94 | 764·07 | 758·61 | 758·31 | 760·13 | 761·25 | 755·36 | 766·38 | Jan. 1–5 |
| „ 6–10 | 5·72 | 4·11 | 3·50 | 2·67 | 2·39 | 1·06 | 2·94 | 1·83 | 5·61 | 3·89 | 2·94 | 1·83 | 3·83 | 2·89 | 66·96 | 59·29 | 57·39 | 59·12 | 58·41 | 52·03 | 60·44 | „ 6–10 |
| „ 11–15 | 9·28 | 8·06 | 6·17 | 5·39 | 4·67 | 3·94 | 3·17 | 2·22 | 6·94 | 5·39 | 4·94 | 4·39 | 4·50 | 3·44 | 73·55 | 65·69 | 63·44 | 64·58 | 71·36 | 61·76 | 74·12 | „ 11–15 |
| „ 16–20 | 9·61 | 8·50 | 7·28 | 6·56 | 6·56 | 5·61 | 5·28 | 4·11 | 9·00 | 7·94 | 5·89 | 5·11 | 6·17 | 5·11 | 70·19 | 63·08 | 61·42 | 62·62 | 67·75 | 59·55 | 71·33 | „ 16–20 |
| „ 21–25 | 8·33 | 7·00 | 3·67 | 2·94 | 1·72 | (0·83) | 1·67 | 0·28 | 8·17 | 7·00 | 4·44 | 3·33 | 6·56 | 5·06 | 58·36 | 47·54 | 43·90 | 44·00 | 54·67 | 41·80 | 55·18 | „ 21–25 |
| „ 26–30 | 7·56 | 6·61 | 3·67 | 3·11 | 2·17 | 1·33 | 1·67 | 0·72 | 6·33 | 4·94 | 1·78 | 0·67 | 2·39 | 1·50 | 62·85 | 56·53 | 55·92 | 58·46 | 58·78 | 52·28 | 62·24 | „ 26–30 |
| Feb. 31–4 | 5·78 | 4·72 | 3·44 | 2·72 | 2·61 | 2·00 | 4·11 | 2·94 | 4·11 | 2·78 | 1·72 | 1·00 | 3·17 | 2·28 | 75·50 | 70·60 | 69·18 | 71·11 | 69·38 | 65·01 | 73·24 | Feb. 31–4 |
| „ 5–9 | 8·50 | 7·39 | 5·28 | 4·17 | 5·67 | 4·67 | 5·61 | 4·50 | 6·28 | 4·83 | 2·44 | 1·67 | 1·28 | 0·72 | 70·60 | 67·37 | 66·74 | 67·83 | 68·37 | 64·27 | 74·77 | „ 5–9 |
| „ 10–14 | 8·39 | 7·39 | 4·39 | 3·94 | 3·06 | 2·39 | 3·89 | 2·72 | 8·61 | 7·94 | 2·94 | 2·11 | 5·39 | 4·67 | 57·59 | 54·11 | 56·40 | 60·46 | 54·24 | 51·11 | 61·07 | „ 10–14 |
| „ 15–19 | 10·00 | 8·83 | 7·67 | 6·67 | 7·33 | 6·28 | 6·56 | 5·33 | 9·39 | 8·67 | 7·28 | 6·17 | 8·11 | 7·11 | 58·99 | 54·04 | 54·21 | 56·07 | 60·72 | 53·55 | 66·81 | „ 15–19 |
| „ 20–24 | 9·39 | 8·33 | 8·17 | 7·33 | 7·44 | 6·44 | 7·44 | 5·67 | 8·56 | 7·56 | 6·83 | 6·17 | 7·78 | 6·78 | 72·40 | 65·21 | 63·15 | 63·51 | 67·52 | 60·92 | 71·92 | „ 20–24 |
| „ 25–1 | 10·78 | 10·11 | 8·78 | 8·11 | 7·61 | 6·72 | 5·89 | 4·83 | 10·06 | 9·56 | 8·11 | 7·44 | 9·50 | 8·44 | 55·87 | 49·26 | 48·05 | 49·64 | 56·07 | 46·62 | 59·85 | „ 25–1 |
| March 2–6 | 10·33 | 9·17 | 8·78 | 7·67 | 8·28 | 7·06 | 7·78 | 5·89 | 9·56 | 8·22 | 7·78 | 6·78 | 9·56 | 7·56 | 69·28 | 59·55 | 56·37 | 55·99 | 66·50 | 55·82 | 68·37 | March 2–6 |
| „ 7–11 | 10·00 | 8·89 | 7·83 | 6·56 | 5·67 | 4·22 | 3·78 | 2·00 | 9·33 | 8·06 | 5·94 | 4·83 | 7·89 | 5·67 | 68·67 | 58·61 | 54·95 | 55·00 | 62·93 | 52·56 | 63·74 | „ 7–11 |
| „ 12–16 | 8·61 | 7·22 | 4·67 | 3·39 | 3·78 | 2·06 | 3·39 | 1·89 | 7·00 | 5·22 | 3·44 | 1·61 | 4·33 | 2·11 | 74·07 | 69·45 | 69·38 | 71·84 | 68·47 | 64·15 | 72·33 | „ 12–16 |
| „ 17–21 | 9·89 | 8·67 | 8·17 | 7·00 | 7·83 | 6·28 | 8·33 | 6·00 | 8·33 | 6·61 | 7·22 | 6·11 | 8·17 | 6·17 | 74·72 | 67·62 | 64·86 | 65·44 | 68·18 | 61·02 | 70·55 | „ 17–21 |
| „ 22–26 | 6·06 | 4·28 | 2·78 | 1·61 | 2·17 | (0·06) | 0·00 | −0·83 | 4·94 | 3·00 | 1·22 | −0·50 | 2·33 | 0·33 | 63·31 | 55·23 | 52·74 | 53·73 | 54·92 | 47·48 | 56·53 | „ 22–26 |
| „ 27–31 | 5·94 | 4·33 | 2·22 | 0·83 | 1·78 | −0·56 | −0·44 | −1·56 | 4·67 | 3·17 | 1·67 | −0·22 | 2·61 | 1·00 | 52·82 | 47·00 | 46·32 | 48·20 | 43·83 | 40·04 | 47·54 | „ 27–31 |
| April 1–5 | 6·44 | 4·83 | 4·11 | 2·89 | 4·56 | 2·83 | 2·56 | (1·50) | 6·44 | 4·83 | 3·94 | 2·67 | 4·72 | 3·17 | 51·77 | 43·73 | 41·46 | 43·27 | 47·00 | 38·09 | 49·52 | April 1–5 |
| „ 6–10 | 9·11 | 7·50 | 7·17 | 5·00 | 6·11 | 3·78 | 5·33 | 4·17 | 7·89 | 6·44 | 6·06 | 4·00 | 6·78 | 4·72 | 56·96 | 56·68 | 59·75 | 64·93 | 52·77 | 54·19 | 61·73 | „ 6–10 |
| „ 11–15 | 11·17 | 10·28 | 10·39 | 9·17 | 9·39 | 8·11 | 8·50 | 7·39 | 10·39 | 9·72 | 10·67 | 8·56 | 10·44 | 8·67 | 56·48 | 53·53 | 55·94 | 60·29 | 56·09 | 52·08 | 62·14 | „ 11–15 |
| „ 16–20 | 11·11 | 10·11 | 10·44 | 9·33 | 10·33 | 9·17 | 7·67 | 7·17 | 10·50 | 9·78 | 10·11 | 9·11 | 10·83 | 9·61 | 49·49 | 45·93 | 47·38 | 51·98 | 48·57 | 43·37 | 53·68 | „ 16–20 |
| „ 21–25 | 11·17 | 9·39 | 9·83 | 8·33 | 8·28 | 7·00 | 6·56 | 6·00 | 10·33 | 9·11 | 9·17 | 7·61 | 10·94 | 9·39 | 55·00 | 52·43 | 54·47 | 59·58 | 47·35 | 46·98 | 53·53 | „ 21–25 |
| „ 26–30 | 11·28 | 9·89 | 9·89 | 8·06 | 8·89 | 6·44 | 6·00 | 5·22 | 10·17 | 9·22 | 9·33 | 6·83 | 10·83 | 8·83 | 57·72 | 55·43 | 57·06 | 61·32 | 54·60 | 51·98 | 60·85 | „ 26–30 |
| May 1–5 | 12·33 | 10·50 | (11·94) | (10·00) | 11·17 | 9·17 | 10·61 | 8·44 | 11·78 | 10·50 | 11·61 | 9·94 | 13·33 | 11·50 | 58·36 | (52·48) | 52·18 | 54·26 | 55·05 | 49·34 | 59·50 | May 1–5 |
| „ 6–10 | 12·11 | 10·11 | 10·39 | 9·33 | 9·39 | (7·44) | 8·00 | 6·44 | 12·00 | 10·67 | 10·56 | 8·83 | 13·78 | 12·17 | 49·99 | 49·74 | 52·79 | 58·38 | 47·99 | 46·44 | 54·24 | „ 6–10 |
| „ 11–15 | 12·39 | 11·17 | 11·89 | 10·78 | 11·61 | 9·89 | 9·33 | 8·50 | 12·72 | 11·67 | 12·50 | 10·67 | 14·17 | 12·17 | 41·49 | 39·51 | 42·15 | 47·00 | 43·07 | 38·92 | 50·66 | „ 11–15 |
| „ 16–20 | 11·89 | 10·33 | 10·94 | 9·44 | 10·94 | 9·00 | 10·17 | 8·11 | 12·33 | 11·22 | 11·67 | 9·78 | 13·89 | 12·06 | 52·84 | 46·54 | 45·93 | 48·25 | 53·23 | 44·46 | 57·90 | „ 16–20 |
| „ 21–25 | 10·78 | 9·28 | 8·83 | 7·67 | 8·61 | 6·56 | 7·44 | 5·89 | 11·17 | 9·39 | 8·72 | 7·06 | 10·61 | 8·89 | 53·78 | 47·08 | 46·27 | 48·52 | 49·74 | 41·85 | 52·64 | „ 21–25 |
| „ 26–30 | 11·33 | 9·33 | 10·11 | 8·78 | 10·89 | 8·78 | 9·72 | 8·33 | 11·56 | 10·17 | 11·00 | 9·11 | 11·33 | 9·83 | 60·44 | 54·95 | 54·11 | 57·31 | 54·40 | 49·62 | 58·71 | „ 26–30 |
| June 31–4 | 13·28 | 11·78 | 11·33 | 9·72 | 10·61 | 8·06 | 8·50 | 6·44 | 13·33 | 12·00 | 11·33 | 9·44 | 12·61 | 10·83 | 58·99 | 55·16 | 56·12 | 59·85 | 54·92 | 50·74 | 60·00 | June 31–4 |
| „ 5–9 | 13·83 | 12·67 | 12·50 | 11·28 | 11·83 | 10·00 | 10·11 | 8·44 | 14·28 | 12·94 | 12·89 | 11·28 | 14·61 | 12·56 | 56·65 | 52·01 | 52·31 | 56·12 | 54·72 | 49·01 | 59·90 | „ 5–9 |
| „ 10–14 | 12·94 | 11·28 | 11·44 | 10·56 | 11·72 | 9·56 | 9·67 | 8·50 | 13·22 | 11·78 | 11·17 | 9·67 | 13·28 | 11·33 | 53·15 | 47·13 | 47·69 | 51·37 | 49·72 | 43·32 | 54·62 | „ 10–14 |
| „ 15–19 | 12·94 | 10·94 | 12·56 | 11·00 | 12·72 | 10·33 | 10·17 | 8·61 | 13·89 | 12·00 | 12·44 | 10·33 | 13·11 | 11·44 | 59·85 | 53·70 | 53·23 | 56·12 | 54·37 | 49·01 | 58·23 | „ 15–19 |
| „ 20–24 | 14·11 | 12·78 | 14·33 | 12·56 | 14·94 | 12·22 | 14·39 | 12·17 | 16·28 | 14·33 | 15·67 | 13·50 | 18·11 | 15·17 | 61·20 | 56·78 | 57·49 | 60·51 | 59·39 | 54·21 | 63·89 | „ 20–24 |
| „ 25–29 | 15·00 | 13·78 | 17·44 | 15·72 | 19·61 | 16·22 | 16·83 | 14·72 | 17·56 | 15·78 | 20·89 | 17·11 | 21·72 | 17·83 | 760·15 | 756·63 | 758·36 | 762·64 | 756·24 | 753·68 | 761·93 | „ 25–29 |

NOTE.—Means which are enclosed in brackets are a little doubtful, one of the five daily means being approximate.

# TABLE II.—PART 2.

## FIVE-DAY MEANS of the DRY-BULB and WET-BULB THERMOMETERS, and BAROMETER, from the continuous RECORDS at the SEVEN BRITISH OBSERVATORIES, July to December 1878.

| Five-Day Periods. | THERMOMETERS. | | | | | | | | | | | | | | BAROMETER. | | | | | | | Five-Day Periods. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Valencia. 3·66 m. | | Armagh. 1·22 m. | | Glasgow. 2·13 m. | | Aberdeen. 12·50 m. | | Falmouth. 3·35 m. | | Stonyhurst. 2·13 m. | | Kew. 3·05 m. | | Valencia. 7·01 m. | Armagh. 63·09 m. | Glasgow. 56·03 m. | Aberdeen. 26·82 m. | Falmouth. 64·31 m. | Stonyhurst. 110·03 m. | Kew. 10·36 m. | |
| | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | Dry. | Wet. | | | | | | | | |
| | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | ° C. | mm. | mm. | mm. | mm. | mm. | mm. | mm. | |
| June 30–4 | 15·67 | 14·17 | 14·89 | 12·94 | 14·17 | 11·11 | 11·44 | 9·28 | 15·44 | 13·50 | 13·61 | 11·00 | 14·83 | 12·83 | 761·12 | 756·55 | 756·14 | 759·02 | 756·14 | 751·32 | 759·68 | June 30–4 |
| July 5–9 | 15·78 | 14·83 | 15·89 | 14·22 | 14·83 | 13·00 | 14·89 | 12·67 | 16·56 | 15·11 | 15·61 | 13·89 | 17·39 | 14·78 | 63·51 | 56·40 | 54·40 | 55·48 | 59·70 | 51·80 | 62·39 | July 5–9 |
| ,, 10–14 | 15·33 | 13·78 | 13·94 | 12·33 | 14·39 | 11·89 | 13·61 | 11·22 | 15·67 | 13·89 | 13·89 | 12·28 | 15·89 | 13·22 | 63·84 | 56·96 | 54·40 | 56·07 | 57·51 | 50·45 | 60·08 | ,, 10–14 |
| ,, 15–19 | 17·89 | 16·50 | 17·67 | 16·39 | 16·72 | 14·83 | 17·67 | 15·06 | 18·61 | 16·22 | 17·67 | 15·94 | 19·72 | 16·72 | 70·57 | 64·86 | 63·20 | 64·15 | 64·02 | 59·29 | 67·96 | ,, 15–19 |
| ,, 20–24 | 19·06 | 17·11 | 17·67 | 16·06 | 16·83 | 14·72 | 14·44 | 13·44 | 19·33 | 17·33 | 19·56 | 16·83 | 19·83 | 17·44 | 61·25 | 56·58 | 57·06 | 61·10 | 54·85 | 52·06 | 60·03 | ,, 20–24 |
| ,, 25–29 | 15·89 | 14·28 | 14·06 | 12·22 | 15·22 | 12·33 | 13·44 | 11·56 | 16·50 | 14·22 | 14·89 | 12·83 | 16·33 | 14·22 | 60·10 | 55·21 | 53·94 | 56·88 | 55·02 | 49·11 | 58·10 | ,, 25–29 |
| Aug. 30–3 | 17·89 | 15·06 | 15·67 | 13·44 | 15·89 | 12·78 | 12·94 | 11·39 | 16·33 | 14·22 | 15·56 | 13·11 | 15·72 | 13·33 | 64·50 | 62·04 | 63·08 | 67·35 | 58·26 | 56·68 | 63·46 | Aug. 30–3 |
| ,, 4–8 | 16·89 | 15·56 | 16·22 | 14·94 | 16·72 | 14·83 | 15·22 | 14·44 | 17·61 | 15·94 | 16·56 | 15·00 | 18·33 | 16·11 | 56·04 | 51·62 | 52·46 | 57·09 | 52·48 | 47·64 | 57·36 | ,, 4–8 |
| ,, 9–13 | 16·28 | 14·83 | 15·22 | 13·67 | 14·72 | 12·78 | 15·00 | 13·00 | 17·00 | 15·56 | 15·50 | 13·67 | 17·39 | 15·33 | 52·36 | 46·49 | 46·01 | 48·93 | 50·35 | 43·90 | 55·53† | ,, 9–13 |
| ,, 14–18 | 15·78 | 14·17 | 14·78 | 13·50 | 13·39 | 11·61 | 12·61 | 11·28 | 16·06 | 14·17 | 15·06 | 13·50 | 16·67 | 14·56 | 54·11 | 46·93 | 45·66 | 48·70 | 50·08 | 42·25 | 53·02 | ,, 14–18 |
| ,, 19–23 | 15·61 | 14·22 | 14·83 | 13·11 | 13·78 | 11·83 | 12·22 | 10·72 | 16·50 | 15·11 | 14·44 | 12·22 | 16·11 | 14·22 | 54·67 | 53·83 | 55·64 | 60·08 | 50·94 | 50·15 | 57·41 | ,, 19–23 |
| ,, 24–28 | 15·56 | 14·33 | 15·17 | 13·72 | 15·11 | 13·50 | 14·17 | 13·61 | 16·67 | 15·22 | 15·22 | 13·72 | 16·28 | 15·11 | 48·98 | 44·84 | 45·20 | 48·91 | 46·34 | 40·73 | 50·69 | ,, 24–28 |
| Sept. 29–2 | 15·50 | 14·06 | 13·94 | 12·94 | 14·61 | 12·72 | 13·56 | 12·61 | 15·78 | 14·11 | 14·72 | 13·33 | 15·83 | 14·11 | 58·43 | 52·06 | 51·01 | 54·24 | 52·99 | 46·18 | 56·34 | Sept. 29–2 |
| ,, 3–7 | 16·50 | 15·44 | 15·78 | 14·61 | 15·56 | 14·11 | 15·28 | 13·83 | 16·72 | 15·39 | 16·17 | 14·94 | 16·39 | 15·00 | 62·59* | 58·15 | 57·77 | 60·51 | (59·34) | 54·55 | 64·22 | ,, 3–7 |
| ,, 8–12 | 15·67 | 13·94 | (14·67) | (12·83) | 14·17 | 11·94 | 13·83 | 11·67 | 16·44 | 14·94 | 13·78 | 12·06 | 14·89 | 13·39 | 65·95 | 59·58 | 57·95 | 59·83 | (61·30) | 55·05 | 64·56 | ,, 8–12 |
| ,, 13–17 | 14·89 | 13·44 | 13·50 | 12·06 | 13·11 | 11·28 | 13·61 | 10·78 | 15·11 | 12·94 | 12·89 | 11·44 | 13·83 | 11·78 | 58·88 | 49·47 | 46·06 | 46·01 | 57·16 | 46·64 | 59·70 | ,, 13–17 |
| ,, 18–22 | 12·22 | 10·17 | 9·72 | 8·56 | 9·50 | 7·72 | 10·33 | 7·89 | 13·06 | 11·06 | 9·89 | 8·22 | 11·39 | 9·83 | 59·22 | 51·45 | 49·39 | 51·21 | 55·36 | 47·23 | 58·97 | ,, 18–22 |
| ,, 23–27 | 13·06 | 11·61 | 10·33 | 9·56 | 9·89 | 8·44 | 10·83 | 9·00 | 12·67 | 11·00 | 10·00 | 8·83 | 10·28 | 9·11 | 57·49 | 49·77 | 47·99 | 50·35 | 52·59 | 44·79 | 55·79 | ,, 23–27 |
| Oct. 28–2 | 13·28 | 12·28 | 11·94 | 11·28 | 9·22 | 7·94 | 8·11 | 6·72 | 13·94 | 12·72 | 11·11 | 10·33 | 12·78 | 11·39 | 61·66 | 56·40 | 56·80 | 60·34 | 58·12 | 52·18 | 62·29 | Oct. 28–2 |
| ,, 3–7 | 15·06 | 14·11 | 14·67 | 13·44 | 13·83 | 12·61 | 12·11 | 11·33 | 15·17 | 14·11 | 14·39 | 13·17 | 14·33 | 12·72 | 50·86 | 49·29 | 51·14 | 55·21 | 52·21 | 48·67 | 60·05 | ,, 3–7 |
| ,, 8–12 | 12·50 | 10·89 | (11·56) | (10·44) | 12·06 | 10·61 | 12·06 | 10·61 | 12·83 | 11·11 | 12·11 | 10·56 | 12·67 | 10·89 | 48·96 | 41·39 | 40·58 | 43·19 | 49·23 | 40·04 | 53·94 | ,, 8–12 |
| ,, 13–17 | 13·06 | 12·00 | 12·06 | 10·56 | 11·72 | 9·78 | 11·61 | 10·44 | 13·06 | 11·33 | 10·50 | 9·22 | 10·39 | 9·39 | 57·51 | 54·90 | 56·40 | 60·00 | 56·48 | 53·86 | 63·54 | ,, 13–17 |
| ,, 18–22 | 12·11 | 10·72 | 10·11 | 9·33 | 10·06 | 8·72 | 10·11 | 9·28 | 12·83 | 11·83 | 10·33 | 9·17 | 11·72 | 10·56 | 48·22 | 42·78 | 42·88 | 46·34 | 46·18 | 40·73 | 51·37 | ,, 18–22 |
| ,, 23–27 | 9·33 | 7·56 | 6·28 | 5·61 | 6·67 | 5·44 | 6·33 | 5·11 | 9·89 | 8·39 | 6·83 | 5·72 | 8·17 | 6·94 | 47·54 | 38·21 | 35·80 | 37·22 | 42·51 | 33·28 | 45·20 | ,, 23–27 |
| Nov. 28–1 | 7·22 | 5·56 | 3·94 | 3·28 | 4·67 | 2·67 | 4·39 | 3·33 | 7·44 | 5·61 | 4·56 | 2·89 | 5·11 | 4·00 | 65·26 | 56·07 | 52·56 | 53·33 | 55·84 | 47·00 | 56·45 | Nov. 28–1 |
| ,, 2–6 | 7·78 | 6·22 | 5·11 | 4·22 | 4·78 | 3·06 | 4·44 | 3·50 | 7·00 | 5·39 | 3·83 | 2·22 | 4·22 | 3·00 | 65·98 | 58·94 | 57·24 | 58·68 | 56·75 | 50·86 | 58·53 | ,, 2–6 |
| ,, 7–11 | 7·56 | 5·94 | 3·44 | 2·78 | 3·33 | 1·94 | 2·44 | 1·44 | 7·28 | 5·50 | 3·50 | 2·39 | 4·89 | 3·67 | 57·61 | 47·71 | 45·12 | 46·37 | 51·77 | 41·16 | 52·64 | ,, 7–11 |
| ,, 12–16 | 5·89 | 4·11 | 3·11 | 2·39 | 4·50 | 2·44 | 4·44 | 3·44 | 5·72 | 4·22 | 3·83 | 2·22 | 4·11 | 3·11 | 57·21 | 48·55 | 46·18 | 47·61 | 44·94 | 38·29 | 45·42 | ,, 12–16 |
| ,, 17–21 | 7·44 | 6·06 | 3·28 | 2·78 | 4·50 | 3·44 | 5·17 | 4·17 | 5·56 | 4·17 | 3·17 | 2·39 | 5·17 | 4·00 | 67·30 | 62·04 | 61·22 | 63·10 | 60·34 | 56·22 | 63·54 | ,, 17–21 |
| ,, 22–26 | 5·28 | 4·17 | 1·56 | 1·06 | 2·89 | 2·28 | 3·94 | 2·89 | 7·11 | 6·00 | 1·83 | 1·50 | 4·94 | 4·17 | 52·82 | 48·52 | 48·50 | 51·86 | 46·98 | 43·67 | 53·15 | ,, 22–26 |
| Dec. 27–1 | 6·11 | 5·06 | 2·33 | 1·89 | 2·00 | 1·06 | 2·44 | 1·39 | 5·44 | 4·11 | 2·11 | 1·11 | 2·78 | 2·11 | 60·82 | 53·58 | 52·79 | 55·79 | 51·24 | 46·59 | 54·26 | Dec. 27–1 |
| ,, 2–6 | 5·50 | 4·56 | 1·50 | 1·06 | 1·94 | 1·06 | 1·67 | 0·94 | 4·44 | 2·94 | 1·72 | 0·61 | 2·67 | 1·67 | 68·87 | 62·44 | 61·22 | 63·15 | 61·12 | 55·51 | 63·49 | ,, 2–6 |
| ,, 7–11 | 3·28 | (2·11) | −1·89 | −2·39 | 0·00 | −1·33 | −0·28 | −0·67 | 1·06 | 0·06 | −1·17 | −2·22 | −0·22 | −0·83 | (59·22) | 52·87 | 51·80 | 53·94 | 50·28 | 45·53 | 53·73 | ,, 7–11 |
| ,, 12–16 | 1·17 | 0·61* | −3·28 | −3·61 | −4·22† | −4·44† | −2·33 | −2·83 | 2·17 | 1·22 | −4·06 | −4·39 | −1·89 | −2·17 | 52·31 | 47·20 | 46·29 | 48·05 | 46·37 | 42·35 | 52·28 | ,, 12–16 |
| ,, 17–21 | 2·17 | 1·39 | −1·33 | −1·78 | −1·78* | −2·56* | −0·67 | −1·39 | 2·78 | 1·72 | −2·61 | −3·22 | −0·44 | −0·89 | 52·13 | 43·57 | 40·90 | 42·61 | 45·66 | 36·87 | 48·12 | ,, 17–21 |
| ,, 22–26 | 3·11 | 2·17 | −3·78 | −4·17 | −2·78 | −3·50 | −1·22 | −1·78 | 4·56 | 3·50 | −3·50 | −4·11 | −1·78 | −2·11 | 57·39 | 54·19 | 53·38 | 55·16 | 52·51 | 48·42 | 58·41 | ,, 22–26 |
| ,, 27–31 | 8·17 | 7·11 | 4·33 | 3·78 | 3·11 | (2·50) | 2·44 | 1·89 | 9·17 | 8·28 | 4·50 | 3·78 | 7·67 | 6·89 | 742·37 | 736·74 | 736·87 | 739·51 | 743·22 | 735·04 | 748·22 | ,, 27–31 |

NOTE.—Means which are enclosed in brackets are a little doubtful, one of the five daily means being approximate.

* Two of the five daily means are approximate.

† Three of the five daily means are approximate.

# APPENDIX II.

## ON THE COMPUTATION OF THE QUANTITY OF HEAT IN EXCESS OF ANY FIXED BASE TEMPERATURE, RECEIVED AT ANY PLACE DURING THE COURSE OF THE YEAR, TO SUPPLY A STANDARD FOR COMPARISON WITH THE PROGRESS OF VEGETATION, BY LIEUT.-GENERAL RICHARD STRACHEY, R.E., F.R.S.

THE discussions which have taken place at various times, by various writers, as to the manner in which vegetation is affected by temperature, appear to establish that it is not so much the absolute temperature which it is necessary to consider, as the excess above a certain minimum, prolonged for a certain time; the minimum below which active vegetation does not commence, as well as the necessary amount of the excess above this minimum, and the time during which it must be maintained, in order to ensure the plant arriving at full maturity, varying for various species.

This matter has been discussed at length by Mons. A. de Candolle in his "Géographie Botanique." But he recognises the difficulty of obtaining the necessary thermometrical data for the practical application of this principle; and it becomes a question of some interest whether a method may not be devised by which the amount of the excess of the daily temperature above any fixed minimum can be obtained, for the information of persons engaged in agriculture, without laborious calculations, from such observations of temperature as are commonly made, and with a fair approach to exactitude. It is the object of this paper to suggest a manner of doing this.

For the purpose in view, the natural unit by which to reckon the accumulated excess temperature would be one degree continued for the unit of time, either one hour or one day, as the case might be. Such an unit, following the analogy of the "*foot-pound*" might be called the "hour-degree" or day-degree." The accumulated excess temperature thus measured might also conveniently be termed the total "*effective temperature,*" which would in each case be referred to some fixed standard, or "*base temperature,*" above which it would be reckoned.

In the sequel the following symbols will be employed to represent the several quantities to which reference will be made:—

The maximum temperature - - - $T$
„ minimum „ - - - $t$
„ mean „ - - - $\Theta$
„ base „ - - - $\tau$
„ effective temperature above $\tau$ - - $E$
„ „ „ „ $\Theta$ - - $E_\theta$

If, now, the diurnal temperature curve be graphically represented, the unit of the ordinates being one degree, and the unit of the abscissæ being one hour, the area between the curve and a line drawn through the base temperature perpendicular to the ordinates, lying above that line, will represent the effective temperature $E$ above the base $\tau$, in hour-degrees.

Also the areas between the curve and the line of mean temperature, both above and below that line, will be equal, and will each equal $E_\theta$.

The whole area between the curve and the line of minimum temperature will manifestly be equal to $24\,(\Theta - t)$ in hour-degrees; and the part of this area below the line of mean temperature will be $24\,(\Theta - t) - E_\theta$.

The base temperature $\tau$ may be:—1st, less than $t$; 2nd greater than $t$, but less than $\Theta$; 3rd greater than $\Theta$, but less than T.

*First case.* Here it follows immediately that $E = 24\,(\Theta - \tau)$ in hour-degrees.

*Second case.* As the areas between the temperature curve both *above* and *below* the mean line are equal to $E_\theta$, E will be equal to the area between the temperature lines drawn through $\Theta$ and $\tau$, plus that part of the area between the temperature curve and the line of mean temperature which lies below $\tau$. If this part of $E_\theta$ be represented by $\alpha E_\theta$, we have $E = 24\,(\Theta - \tau) + \alpha E_\theta$, in hour-degrees.

*Third case.* If in like manner, the part of the area between the temperature curve and the mean line which rises above $\tau$ be called $\beta E_\theta$, then $E = \beta E_\theta$, in hour-degrees.

For the exact computation of E from these expressions it would be necessary to know, $\Theta$ the mean temperature; $E_\theta$ the area between the temperature curve and the mean line; and the ratios $\alpha$ and $\beta$, corresponding respectively to the segments of $E_\theta$, having the fractional height $\frac{\tau - t}{\Theta - \tau}$ when $\tau$ is less than $\Theta$, and the fractional height $\frac{T - \tau}{T - \Theta}$ when $\tau$ is greater than $\Theta$.

The quantity $E_\theta$ may be computed as follows: Let A, B, C, . . . . M, N represent the consecutive positive differences of the hourly temperatures above the mean, and $a, b, c, \ldots m, n$ the negative differences below the mean, taken in the opposite direction as regards time, so that A will follow $a$, and $n$ will follow N, all the quantities being regarded as positive. Then $E_\theta$, which is equal to the area between the temperature curve and the mean line will equal that part of this area which lies between the ordinates A and N, added to the two small triangular areas above the mean line, lying between A and $a$, and between N and $n$. Then, assuming, as we may, that the portions of the temperature curve between the observed hourly values are straight lines, the area of the triangular space above the mean line between A and $a$ will equal $\frac{A^2}{2\,(A + a)}$ in hour-degrees, and the area between N and $n$ will be $\frac{N^2}{2\,(N + n)}$. Also the area between the temperature curve, the ordinates A and N, and the mean line will equal the sum of all the positive differences, which call S, minus $\frac{1}{2}\,(A + N)$. Hence—

$$E_\theta = S - \tfrac{1}{2}(A + N) + \frac{A^2}{2(A + a)} + \frac{N^2}{2(N + n)} = S - \frac{A\,a}{2(A + a)} - \frac{N\,n}{2(N + n)}$$

The fractional quantities in this expression will usually be comparatively small, and a sufficient approximation to the true value of $E_\theta$ in hour-degrees, may usually be obtained, simply by adding together the hourly excesses of temperature above the mean. Further, as the areas between the temperature curve and the mean line both above and *below* that line are equal to $E_\theta$, this quantity may be taken to be half the sum of the positive and negative differences of the hourly temperatures from the mean, disregarding sign. The correction for the fractional quantities above referred to, which should be applied to this half sum, will evidently be as before—

$$-\frac{A\,a}{2\,(A + a)} - \frac{N\,n}{2\,(N + n)}$$

The value of $E_\theta$ may also be obtained approximately, directly from the hourly temperatures, without calculating the differences from the mean, as follows. Call $m$ the number of hours in which the temperature exceeds the mean; then $24 - m$ is the number of hours in which it falls

**short of the mean.** Hence, approximately, $E_\theta$ equals the sum of the temperatures in excess of the **mean** *minus* $m\,\Theta$; or $(24 - m)\,\Theta$ *minus* the sum of the temperatures less than the mean.

The ratios $\alpha$ and $\beta$ will depend not only on the height of the segment of $E_\theta$ cut off by the line drawn through temperature $\tau$, but also on the form of the temperature curve, and will vary from time to time with that curve; but, as will hereafter be shown, this last variation does not appear to be of practical importance in relation to the calculations now in question.

Thus far it has been supposed that hourly observations of temperature were available, from which $\Theta$ and $E_\theta$ could be calculated. But in fact this is seldom the case, and if it were, the computations would commonly be so laborious as to be impracticable. It remains to be seen, therefore, whether some method may not be found which will be applicable to such observations as are commonly made, and will give a fair approximation to the truth without troublesome calculations.

The ordinary observations of temperature being most frequently limited to the daily maximum and minimum, the endeavour has been made to establish a relation between the effective temperature and these quantities, instead of with the hourly temperatures and the mean derived from them; and to accomplish this it would suffice to ascertain the ratios—

$$\frac{\Theta - t}{T - t} = m, \text{ and } \frac{E_\theta}{T - t} = n.$$

Before proceeding, however, to examine whether the conditions of the problem admit of such a form as this being given to the computation, it will be convenient to show the modifications which would be introduced into the expressions for the value of E, by the proposed change, which would render those expressions dependent only on T, $t$, $\tau$, and certain constants.

*First case:* $\tau < t$.

$$\begin{aligned} \text{As before } E &= 24\,(\Theta - \tau) \\ &= 24\{(\Theta - t) + (t - \tau)\} = 24\,\{m\,(T - t) + (t - \tau)\} \text{ in hour-degrees.} \\ &= m\,(T - t) + (t - \tau) \text{ in day-degrees.} \end{aligned}$$

*Second case:* $\tau > t < \Theta$.

$$\begin{aligned} \text{As before } E &= 24\,(\Theta - \tau) + \alpha E_\theta. \\ &= 24\{m\,(T - t) - (\tau - t)\} + \alpha\,n\,(T - t). \\ &= (T - t)\,\{24m + \alpha\,n\} - 24\,(\tau - t) \text{ in hour-degrees.} \\ &= (T - t)\left(m + \frac{\alpha\,n}{24}\right) - (\tau - t) \text{ in day-degrees.} \\ &= (T - t)\left\{m + \frac{\alpha\,n}{24} - \frac{\tau - t}{T - t}\right\} \end{aligned}$$

Here $\alpha$ is a coefficient representing the proportion of the area $E_\theta$ which is cut off *below* the temperature line drawn through $\tau$; and corresponding to a segment having a fractional height equal to $\frac{\tau - t}{\Theta - t} = \frac{\tau - t}{m\,(T - t)}$.

*Third case:* $\tau > \Theta$.

$$\begin{aligned} \text{As before } E &= \beta E_\theta. \\ &= \beta\,n\,(T - t) \text{ in hour-degrees.} \\ &= \frac{\beta\,n}{24}\,(T - t) \text{ in day-degrees.} \end{aligned}$$

Here $\beta$ is a coefficient representing the part of the area $E_\theta$ which is cut off *above* the temperature line drawn through $\tau$; and corresponding to a segment having a fractional height equal to

$$\frac{T - \tau}{T - \Theta} = \frac{(T - t) - (\tau - t)}{(T - t) - (\Theta - t)} = \frac{(T - t) - (\tau - t)}{(T - t) - m(T - t)} = \frac{1}{1 - m}\left\{1 - \frac{\tau - t}{T - t}\right\}$$

As, moreover, it may be desired to obtain a measure of the aggregate deficiency of heat *below* the base temperature, which call $e$, an expression of its value, analogous to that of E, may readily be found as follows :

In the first case, $\tau < t$; evidently $e = o$.
In the second case, $\tau > t \lessdot \Theta$;
Here $e = \alpha E_\theta$;
And $E = (\Theta - \tau) + e$ in day-degrees.
Hence $e = E + (\tau - t) - m\,(T - t)$.
In the third case, $\tau > \Theta < T$;
Here $e = (\tau - t) - (\Theta - t) + E$ in day-degrees.
$= E + (\tau - t) - m\,(T - t)$.
Also when $\tau > T$; $E = o$;
And $e = (\tau - t) - (\Theta - t) = (\tau - t) - m\,(T - t)$.

The next step is to investigate the relation between the mean temperature of the 24 hours and the observed maximum and minimum, that is to determine the value of the coefficient $m = \frac{\Theta - t}{T - t}$.

It here becomes necessary to point out that, unless it be in any case otherwise specially stated, the terms *observed maximum and minimum*, are intended to signify the actual highest and lowest temperatures of the day, and not the highest and lowest entries among a regular series of 24-hourly observations. Between these quantities respectively there are commonly several degrees difference, and the diurnal ranges will of course show differences combining those of the maxima and minima. It may be assumed that these differences will not, however, affect the true mean temperature, which will be best obtained by exclusive reference to a regular series of hourly observations. Some difficulty arises in making allowance for the excess of the observed maximum and observed minimum above and below those shown by the hourly observations, when we come to calculate the area between the temperature curve and the mean line, that is to ascertain the value of $E_\theta$. It has been considered that the best way of dealing with this will be to assume that the observed maximum has occurred during the hour next to that which corresponds to the hourly maximum, and that the area $E_\theta$ has been increased by one half of the difference between the observed and hourly maxima, reckoned in hour-degrees, and the same in the case of the two minima; and as these two differences are usually not equal, half the mean between them has been taken, or one fourth of their sum.

Table I. shows the mean values of the coefficient $m$ for the several months of the year, derived from observations for the periods specified, made at Greenwich, Oxford, Kew, Stonyhurst, Aberdeen, Armagh, Glasgow, Falmouth, and Valencia. It shows fairly consistent results, and indicates that the value of $m$ is greatest in the winter months, least in the spring and autumn, with a second less clearly marked maximum in the summer. This coefficient will also vary from place to place according to the variations to which the law of diurnal temperature is subject. For the British Isles, the mean of the results recorded in Table I., being for an aggregate of 38 years, may be provisionally accepted as giving values of $\Theta$ derived from T and $t$, which will not deviate from the truth in an important degree. The verification of this will be shown hereafter.

Table II. shows the value of the coefficient $n = \frac{E_\theta}{T - t}$ derived from observations made at the same places as those which furnished the values of $m$ in Table I. This also shows fairly consistent results, indicating a well-marked winter minimum, and summer maximum, for this coefficient, as might have been anticipated.

The coefficients $\alpha$ and $\beta$ next have to be considered. They represent the ratio which the segment of the area $E_\theta$ cut off by a temperature line drawn through $\tau$ bears to the whole of that area. Suppose lines to be drawn across the temperature curve, parallel to the line of mean temperature, above and below it, at intervals of successive tenths of the differences respectively between the maximum and mean, and the minimum and mean. Then the heights of the segments of $E_\theta$ cut off by these lines will correspond with values of

$$\frac{T-\tau}{T-\Theta} = \cdot 1, = \cdot 2, = \cdot 3, \text{\&c.; and } \frac{\tau - t}{\Theta - t} = \cdot 1, = \cdot 2, = \cdot 3, \text{\&c.}$$

The actual areas that are thus obtained have been calculated from the Greenwich observations, and will be found in Table III. From these figures it will be seen that although the total area $E_\theta$ varies greatly from month to month, the ratios of the segmental areas to them vary so little during the course of the year, and are so nearly equal for the parts of the temperature curve above and below the mean line, that $\alpha$ and $\beta$ may be regarded as identical, and as constant throughout the year.

On this basis it is easy to calculate tables which shall show for all values of the fraction $\frac{\tau-t}{T-t}$ the quantities $m + \frac{\alpha\, n}{24} + \frac{\tau - t}{T-t}$ and $\frac{\beta\, n}{24}$, which are the required coefficients of $T-t$ in the expressions before given for the value of E. Table IV. gives these quantities for the several months of the year calculated from the data thus explained; and for convenience of calculation Table V. gives the logarithms of the quantities in Table IV. in a somewhat expanded form. Table VI. gives values of $m\,(T-t)$, suitable for use when $\tau$ is less than $t$.

The following examples will show the method of calculation in the three cases which have been dealt with:—

*First case:* $\tau < t$;

$$E = m\,(T-t) + (t-\tau).$$

1881, April 29th, $T = 59\overset{\circ}{\cdot}2$ $\quad T - t = 12\overset{\circ}{\cdot}6.$

$t = 46 \cdot 6$ $\quad t - \tau = 4 \cdot 6.$

$\tau = 42 \cdot 0$ $\quad (T-t)\,m$ (Table VI.) - - 6·0

$\Theta = 52 \cdot 3$ $\quad (t - \tau)$ - - - 4·6

E = 10·6 day-degrees.

The observed result is 10·3.

*Second case:* $\tau > t < \Theta$;

$$E = (T-t)\left\{ m + \frac{\alpha\, n}{24} - \frac{\tau - t}{T - t} \right\}$$

1881, April 17th, $T = 63 \cdot 6$ $\quad T - t = 23 \cdot 7\ (a)$

$t = 39 \cdot 9$ $\quad \tau - t = 2 \cdot 1\ (b)$

$\tau = 42 \cdot 0$ $\quad$ log. $b$ ·322

$\Theta = 52 \cdot 6$ $\quad$ log. $a$ 1·375

Log. $b$ − log. $a$ $\bar{2} \cdot 947$

From Table V., log. coeffit. for April, corresponding to $\bar{2} \cdot 947$ - - $\bar{1} \cdot 597$

Add log. $(a)$ - - $\bar{1} \cdot 375$

Log. E - - - 0·972

E = 9·4 hour-degrees.

The observed result = 10·7.

$$\begin{aligned} \text{Also } e &= E + (\tau - t) - m\,(T - t) \\ &= 9{\cdot}4 + 2{\cdot}1 - 11{\cdot}3 \\ &= 0{\cdot}2 \end{aligned}$$

The observed result is $= 0{\cdot}1$.

*Third case*: $\tau > \Theta < T$;

$$E = (T-t)\,\frac{\beta n}{24}$$

$$\begin{array}{llll} \text{1881, April 5th, } T = 47{\cdot}7 & T-t = 14{\cdot}0\ (a) & & \\ t = 33{\cdot}7 & \tau-t = 8{\cdot}3\ (b) & & \\ \tau = 42{\cdot}0 & \log.\ b\ \text{-} & \text{-} & {\cdot}919 \\ \Theta = 39{\cdot}7 & \log.\ a\ \text{-} & \text{-} & 1{\cdot}146 \\ & \text{Log. } b - \log.\ a & & \bar{1}{\cdot}773 \end{array}$$

$$\begin{array}{lr} \text{From Table V., log. coeffit. for April, corresponding to } \bar{1}{\cdot}773\ \text{-}\ \ \text{-} & \bar{2}{\cdot}884 \\ \text{Add log. } (a)\ \text{-}\ \ \text{-} & 1{\cdot}146 \\ \text{Log. E}\ \text{-}\ \ \text{-}\ \ \text{-} & 0{\cdot}030 \\ E = & 1{\cdot}1 \end{array}$$

From observation $E = 1{\cdot}1$.

$$\begin{aligned} \text{Also } e &= E + (\tau - t) - m\,(T - t) \\ &= 1{\cdot}1 + 8{\cdot}3 - 6{\cdot}7 \\ &= 2{\cdot}7 \end{aligned}$$

The observed result is $3{\cdot}4$.

In order to test the method of calculation thus explained, as well as the applicability of the constant coefficients adopted, the values of E and $e$, above and below 42° F., have been obtained for every day for the first nine months of 1881 from the observed hourly readings of the thermometer at Kew, and the comparison of the calculated and observed values is shown in Table VII.

The results of this comparison for the whole nine months are as follows:—

| | | |
|---|---|---|
| E, observed total | 2815·7 | day-degrees. |
| „ calculated „ | 2763·2 | „ |
| difference | − 52·5 | „ |
| $e$, observed total | 594·3 | „ |
| „ calculated „ | 595·0 | „ |
| difference | + 0·7 | „ |

The differences being less than 2 per cent. on the total amounts, the accordance may be regarded as satisfactory.

But as the calculation of the daily values, in the manner that has been explained, would involve more labour than most observers would be disposed to devote to the object, an approximate result, of tolerable and probably sufficient accuracy, may be obtained from mean values of weekly or other periods, in a much simpler way.

It may be assumed, approximately, that the area of the segments of $E_\theta$ cut off by the temperature line $\tau$, (on which the computation of E and $e$ depends), will bear the same ratio to the height of the segment, $\tau - t$ or $T - \tau$, (according as $\tau$ is less or greater than $\Theta$), that the mean area of all possible segments will bear to their mean height, and this ratio will be found to be about $0{\cdot}7$. But since the absolute error introduced into the values of E or $e$ by such an approximation will depend on the absolute magnitudes of $\tau - t$, or $T - \tau$, it will be necessary, in order to reduce the mean error to a minimum, to use a somewhat larger coefficient, so that the negative errors for the larger segments may on the average be no greater than the positive errors for the smaller segments. The value of the coefficient which will effect this compensation is 0·8 nearly.

Now the area $E_\theta$ is equal to $n\,(T - t)$, and the height of the whole area is $(\Theta - t)$ or $m\,(T - t)$ when $\tau$ is less than $\Theta$, and $(T - \Theta)$ or $(1 - m)\,(T - t)$ when $\tau$ is greater than $\Theta$; therefore the approximate area of a segment having a mean height $\tau - t$, will be $0 \cdot 8\,(\tau - t) \times \frac{n\,(T - t)}{m\,(T - t)}$, when $\tau$ is less than $\Theta$; and when $\tau$ is greater than $\Theta$, the area of the segment having a height $T - t$ will be $0 \cdot 8\,(T - t)\,\frac{n\,(T - t)}{(1 - m)\,T - t}$. The mean value of the first of these expressions is $0 \cdot 17\,(\tau - t)$, and of the second is $0 \cdot 16\,(T - \tau)$, a result which agrees satisfactorily with the values of E and $e$ calculated from the daily observations.

When, however, instead of daily values, the mean values of the temperature for several days are employed for the calculation, the diurnal variations in both directions are to a considerable extent smoothed down, and the computed values both of E and $e$ will be reduced, to a corresponding extent below the true mean of the values obtained from the daily observations. To compensate for this, the coefficients of $(\tau - t)$ or $(T - \tau)$ above given, which for practical purposes may be held to be identical, and for convenience may be called $p$, must be suitably increased.

In Table VIII. are shown comparisons between the observed and calculated values of E and $e$, above and below various base temperatures, vizt., 32°, 42°, 52°, and 62°, for nine months of 1881, from which the sufficiency of the proposed system of computation may be further tested. In these computations the coefficient $p$ has been taken at 0·4 for 32° and 42°, at 0·33 for 52°, and 0·25 for 62°. These have been adopted as giving the best results; and the gradual reduction of the coefficient for the higher base temperatures may be regarded as being due to the less abrupt changes of temperature from day to day in the warmer than in the colder months.

The differences between the observed and calculated values for the different base temperatures are shown below:—

| Base Temperature and Period. | Observed. | | Calculated. | | Difference from Observed Value. | |
|---|---|---|---|---|---|---|
| | E above $\tau$. | $e$ below $\tau$. | E above $\tau$. | $e$ below . | E. | $e$. |
| 32° for 3 months - - - - | 629° | 126° | 632° | 112° | + 3° | −14° |
| 42° „ 9 „ - - - - | 2816 | 605 | 2771 | 603 | −45 | − 2 |
| 52° „ 7 „ - - - - | 1150 | 710 | 1126 | 734 | −24 | +24 |
| 62° „ 5 „ - - - - | 264 | 823 | 248 | 865 | −16 | +42 |

In Table IX. are shown similar comparisons for the year 1873 for the means of five-day periods, also taken from the Kew photographic records, the quantities E and $e$, that is the areas between the thermometric curves and the line of 42° F. above and below that line, having been measured from the engraved curves by a planimeter. The coefficient $p$, adopted for the computation in this case, has been fixed at 0·33, because the five-day means will not flatten the temperature curves so much as the weekly, and because it became apparent that an increase of the coefficient would give a worse result in the series of values of E, which for the purposes in view are of more importance than those of $e$. The somewhat greater discrepancies in this case, which amount to – 56° on a total value of E equal to 3264°, and to – 107° on a total value of $e$ equal to 620°, seem to be due to a divergence between the actual and computed values of the mean temperature, that is between $\Theta - t$ and $m\ (T - t)$, which probably arises from some deviation of the character of the year of observation from the mean character.

The consideration of this subject in its various aspects indicated the probability of obtaining a satisfactory approximation to the accumulated effective temperature by reference to the mean temperature only, and the results obtained by simply subtracting the base temperature 42° F. either from the true mean temperature for the several months for the years 1873 and 1881, or from the mean of the maximum and minimum, are shown in Tables X. and XI. The values thus obtained will be seen to differ very little in detail from the observed quantities, and for the whole year are almost identical in the aggregate.

The explanation of this will be found in the fact that when the value of E is most influenced by the part of the expression which depends on $E_\theta$, then the absolute value of E is small; and *vice versâ*, when the absolute value of E is large, the part dependent on $E_\theta$ is small or disappears entirely. The aggregate error from adopting the mean of maximum and minimum less the base temperature 42°, would be about 4 per cent. in excess in the six months of the summer half year, and about 20 per cent. in defect for the six winter months. As, however, the aggregate effective temperature of the winter half year is rather less than one fifth of that for the whole year, and as vegetation in this climate is almost at a standstill during these months, these differences are not of much importance, and this very simple system of calculation may be adopted without risk of much error, if the more accurate method is considered too troublesome.

# TABLES.

## TABLE I.

MEAN VALUE of the COEFFICIENT $m\ \frac{\Theta - t}{T - t}$ for the several MONTHS of the YEAR at various STATIONS.

$\Theta = t + m(T-t)$

| MONTH. | 20 Years. Greenwich. | 4 Years. Kew. | 3 Years. Oxford. | 3 Years. Stonyhurst. | 3 Years. Aberdeen. | 2 Years. Armagh. | 1 Year. Glasgow. | 1 Year. Falmouth. | 1 Year. Valencia. | Mean of all Stations weighted. | Coefficient adopted. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| January - - | ·530 | ·545 | ·498 | ·495 | ·522 | ·498 | ·529 | ·522 | ·548 | ·524 | ·520 |
| February - - | ·467 | ·503 | ·497 | ·505 | ·495 | ·504 | ·500 | ·491 | ·555 | ·484 | ·500 |
| March - - | ·453 | ·460 | ·478 | ·469 | ·452 | ·463 | ·500 | ·538 | ·545 | ·464 | ·485 |
| April - - | ·444 | ·458 | ·480 | ·466 | ·484 | ·482 | ·491 | ·499 | ·477 | ·459 | ·476 |
| May - - - | ·443 | ·478 | ·486 | ·462 | ·482 | ·496 | ·473 | ·524 | ·474 | ·461 | ·470 |
| June - - - | ·466 | ·478 | ·474 | ·498 | ·459 | ·494 | ·486 | ·500 | ·470 | ·475 | ·465 |
| July - - - | ·453 | ·478 | ·466 | ·492 | ·455 | ·440 | ·503 | ·478 | ·500 | ·466 | ·465 |
| August - - | ·443 | ·475 | ·459 | ·495 | ·475 | ·480 | ·441 | ·452 | ·480 | ·457 | ·470 |
| September - - | ·442 | ·462 | ·468 | ·492 | ·463 | ·480 | ·490 | ·457 | ·466 | ·456 | ·476 |
| October - - | ·450 | ·496 | ·454 | ·488 | ·506 | ·478 | ·479 | ·500 | ·507 | ·468 | ·485 |
| November - - | ·508 | ·523 | ·502 | ·496 | ·512 | ·499 | ·513 | ·521 | ·514 | ·507 | ·500 |
| December - - | ·532 | ·532 | ·501 | ·521 | ·540 | ·526 | ·518 | ·522 | ·543 | ·529 | ·520 |

## TABLE II.

MEAN VALUE of the COEFFICIENT $\frac{n}{24} = \frac{E_\theta}{24\,(T - t)}$ for the several MONTHS of the YEAR at various STATIONS.

| MONTH. | 20 Years. Greenwich. | 3 Years. Oxford. | One Year each. | | | | | | | Mean of all Stations weighted. | Coefficient adopted. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Kew. | Stonyhurst. | Armagh. | Aberdeen. | Glasgow. | Falmouth. | Valencia. | | |
| January - - | ·071 | ·060 | ·071 | ·049 | ·065 | ·064 | ·056 | ·066 | ·055 | ·067 | ·074 |
| February - - | ·092 | ·084 | ·099 | ·083 | ·087 | ·073 | ·084 | ·092 | ·067 | ·090 | ·085 |
| March - - | ·108 | ·113 | ·100 | ·097 | ·101 | ·087 | ·088 | ·077 | ·078 | ·104 | ·105 |
| April - - - | ·119 | ·124 | ·125 | ·119 | ·119 | ·112 | ·120 | ·115 | ·096 | ·117 | ·115 |
| May - - - | ·120 | ·121 | ·135 | ·135 | ·139 | ·119 | ·131 | ·119 | ·127 | ·122 | ·118 |
| June - - - | ·120 | ·112 | ·134 | ·129 | ·125 | ·118 | ·127 | ·129 | ·111 | ·121 | ·120 |
| July - - - | ·118 | ·117 | ·135 | ·123 | ·127 | ·103 | ·119 | ·139 | ·113 | ·119 | ·120 |
| August - - | ·119 | ·122 | ·131 | ·126 | ·128 | ·117 | ·123 | ·118 | ·104 | ·120 | ·118 |
| September - | ·118 | ·121 | ·124 | ·114 | ·118 | ·101 | ·116 | ·103 | ·100 | ·117 | ·115 |
| October - - | ·099 | ·098 | ·104 | ·099 | ·094 | ·087 | ·086 | ·086 | ·083 | ·097 | ·105 |
| November - - | ·083 | ·072 | ·088 | ·076 | ·086 | ·054 | ·067 | ·076 | ·068 | ·080 | ·085 |
| December - - | ·063 | ·064 | ·071 | ·055 | ·058 | ·029 | ·034 | ·056 | ·063 | ·061 | ·074 |

## TABLE III.

### AREAS of SEGMENTS of $E_\theta$ of various HEIGHTS, for the several MONTHS of the YEAR, assuming $E_\theta$ for each MONTH to be 1·0, calculated from the GREENWICH OBSERVATIONS for 20 Years.

| MONTH. | AREAS ABOVE LINE OF MEAN TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Height of Segment divided by $T - \Theta$. | | | | | | | | | |
| | 1·0. | ·9. | ·8. | ·7. | ·6. | ·5. | ·4. | ·3. | ·2. | ·1. |
| January | 1·00 | ·844 | ·695 | ·561 | ·442 | ·332 | ·236 | ·153 | ·084 | ·030 |
| February | — | ·845 | ·704 | ·574 | ·455 | ·337 | ·249 | ·161 | ·085 | ·028 |
| March | — | ·843 | ·700 | ·567 | ·449 | ·341 | ·235 | ·158 | ·081 | ·025 |
| April | — | ·846 | ·704 | ·571 | ·440 | ·336 | ·237 | ·151 | ·081 | ·028 |
| May | — | ·853 | ·714 | ·583 | ·461 | ·330 | ·238 | ·160 | ·084 | ·029 |
| June | — | ·853 | ·717 | ·587 | ·464 | ·340 | ·250 | ·160 | ·085 | ·028 |
| July | — | ·852 | ·711 | ·580 | ·460 | ·351 | ·255 | ·159 | ·092 | ·027 |
| August | — | ·855 | ·713 | ·580 | ·455 | ·343 | ·244 | ·157 | ·084 | ·028 |
| September | — | ·851 | ·712 | ·582 | ·460 | ·349 | ·238 | ·163 | ·083 | ·030 |
| October | — | ·850 | ·707 | ·574 | ·454 | ·344 | ·236 | ·161 | ·089 | ·034 |
| November | — | ·837 | ·689 | ·558 | ·441 | ·334 | ·240 | ·156 | ·086 | ·030 |
| December | — | ·826 | ·665 | ·543 | ·424 | ·319 | ·225 | ·144 | ·076 | ·026 |
| Mean | — | ·846 | ·703 | ·572 | ·450 | ·338 | ·240 | ·157 | ·084 | ·029 |

| MONTH. | AREAS BELOW LINE OF MEAN TEMPERATURE. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Height of Segment divided by $\Theta - t$. | | | | | | | | | |
| | 1·0. | ·9. | ·8. | ·7. | ·6. | ·5. | ·4. | ·3. | ·2. | ·1. |
| January | 1·000 | ·852 | ·798 | ·570 | ·440 | ·321 | ·214 | ·119 | ·051 | ·016 |
| February | — | ·890 | ·719 | ·588 | ·462 | ·345 | ·240 | ·150 | ·078 | ·026 |
| March | — | ·854 | ·713 | ·581 | ·458 | ·344 | ·242 | ·153 | ·080 | ·028 |
| April | — | ·854 | ·718 | ·590 | ·471 | ·359 | ·257 | ·165 | ·086 | ·028 |
| May | — | ·849 | ·707 | ·574 | ·450 | ·338 | ·239 | ·153 | ·081 | ·027 |
| June | — | ·858 | ·705 | ·585 | ·460 | ·345 | ·242 | ·151 | ·078 | ·025 |
| July | — | ·854 | ·715 | ·584 | ·461 | ·347 | ·243 | ·154 | ·082 | ·030 |
| August | — | ·854 | ·712 | ·579 | ·456 | ·344 | ·243 | ·154 | ·080 | ·026 |
| September | — | ·862 | ·727 | ·599 | ·477 | ·361 | ·257 | ·164 | ·087 | ·028 |
| October | — | ·861 | ·725 | ·593 | ·467 | ·350 | ·244 | ·152 | ·078 | ·026 |
| November | — | ·856 | ·718 | ·585 | ·473 | ·348 | ·253 | ·159 | ·086 | ·032 |
| December | — | ·848 | ·711 | ·582 | ·461 | ·350 | ·249 | ·160 | ·085 | ·029 |
| Mean | — | ·858 | ·715 | ·584 | ·460 | ·346 | ·243 | ·153 | ·079 | ·027 |
| General Mean | 1·00 | ·85 | ·71 | ·58 | ·45 | ·34 | ·24 | ·15 | ·08 | ·03 |

## TABLE IV.

### SHOWING for all VALUES of $\tau$ between $t$ and T the MULTIPLIER of $T - t$ which will give the VALUE of E.

| $\frac{\tau - t}{T - t}$ | Jan.<br>Dec. | Feb.<br>Nov. | March<br>October. | April<br>Sept. | May<br>August. | June<br>July. | $\frac{\tau - t}{T - t}$ | Jan.<br>Dec. | Feb.<br>Nov. | March<br>October. | April<br>Sept. | May<br>August. | June<br>July. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ·00 | ·520 | ·500 | ·485 | ·476 | ·470 | ·465 | ·25 | ·292 | ·279 | ·273 | ·269 | ·266 | ·263 |
| 1 | 510 | 490 | 76 | 67 | 61 | 456 | 6 | 83 | 70 | 65 | 61 | 58 | 56 |
| 2 | 500 | 80 | 67 | 58 | 52 | 447 | 7 | 74 | 62 | 57 | 53 | 51 | 49 |
| 3 | 490 | 71 | 58 | 49 | 43 | 438 | 8 | 66 | 54 | 49 | 46 | 44 | 42 |
| 4 | 80 | 62 | 49 | 40 | 34 | 429 | 9 | 58 | 46 | 42 | 39 | 37 | 35 |
| ·05 | ·470 | ·453 | ·440 | ·431 | ·425 | ·420 | ·30 | ·250 | ·238 | ·235 | ·232 | ·230 | ·228 |
| 6 | 61 | 43 | 31 | 22 | 16 | 11 | 1 | 41 | 30 | 27 | 25 | 23 | 21 |
| 7 | 52 | 34 | 22 | 13 | 407 | 402 | 2 | 32 | 22 | 19 | 18 | 16 | 14 |
| 8 | 43 | 25 | 13 | 404 | 398 | 393 | 3 | 24 | 14 | 12 | 11 | 09 | 07 |
| 9 | 34 | 16 | 404 | 395 | 89 | 84 | 4 | 16 | 206 | 205 | 204 | 202 | 201 |
| ·10 | ·425 | ·407 | ·396 | ·387 | ·381 | ·376 | ·35 | ·208 | ·199 | ·198 | ·197 | ·196 | ·195 |
| 1 | 16 | 398 | 87 | 79 | 73 | 68 | 6 | 199 | 91 | 90 | 90 | 89 | 88 |
| 2 | 407 | 89 | 78 | 71 | 65 | 60 | 7 | 90 | 83 | 83 | 83 | 82 | 81 |
| 3 | 398 | 80 | 70 | 63 | 57 | 52 | 8 | 82 | 75 | 76 | 77 | 75 | 75 |
| 4 | 89 | 71 | 62 | 55 | 49 | 44 | 9 | 74 | 67 | 69 | 70 | 69 | 69 |
| ·15 | ·380 | ·363 | ·354 | ·347 | ·342 | ·337 | ·40 | ·166 | ·160 | ·162 | ·164 | ·163 | ·163 |
| 6 | 71 | 54 | 45 | 39 | 34 | 29 | 1 | 57 | 52 | 55 | 58 | 56 | 56 |
| 7 | 62 | 45 | 37 | 31 | 26 | 21 | 2 | 49 | 44 | 48 | 51 | 49 | 49 |
| 8 | 53 | 36 | 29 | 23 | 18 | 13 | 3 | 41 | 37 | 41 | 44 | 42 | 42 |
| 9 | 44 | 28 | 21 | 15 | 10 | 306 | 4 | 33 | 29 | 34 | 37 | 35 | 35 |
| ·20 | ·335 | ·320 | ·313 | ·307 | ·303 | ·299 | ·45 | ·125 | ·122 | ·128 | ·130 | ·128 | ·128 |
| 1 | 26 | 11 | 305 | 299 | 295 | 91 | 6 | 117 | 114 | 121 | 124 | 122 | 122 |
| 2 | 17 | 303 | 297 | 91 | 87 | 84 | 7 | 109 | 107 | 115 | 117 | 118 | 118 |
| 3 | 08 | 295 | 89 | 83 | 80 | 77 | 8 | 101 | 099 | 109 | 113 | 114 | 115 |
| 4 | 300 | 87 | 81 | 76 | 73 | 70 | 9 | 094 | 092 | 103 | 109 | 111 | 112 |
| ·25 | ·292 | ·279 | ·273 | ·269 | ·266 | ·263 | ·50 | ·087 | ·085 | ·097 | ·106 | ·108 | ·109 |

## TABLE IV.—*continued.*

### SHOWING for all VALUES of τ between *t* and T the MULTIPLIER of T − *t* which will give the VALUE of E—*continued.*

| $\frac{\tau - t}{T - t}$ | Jan.<br>Dec. | Feb.<br>Nov. | March<br>October. | April.<br>Sept. | May<br>August. | June<br>July. | $\frac{\tau - t}{T - t}$ | Jan.<br>Dec. | Feb.<br>Nov. | March<br>October. | April<br>Sept. | May<br>August. | June<br>July. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ·50 | ·087 | ·085 | ·097 | ·106 | ·108 | ·109 | ·75 | ·025 | ·029 | ·032 | ·036 | ·036 | ·036 |
| 1 | 80 | 82 | 94 | ·103 | 104 | 105 | 6 | 3 | 7 | 30 | 3 | 3 | 3 |
| 2 | 74 | 79 | 91 | 100 | 100 | 101 | 7 | 21 | 5 | 28 | 31 | 31 | 31 |
| 3 | 69 | 76 | 88 | 097 | 097 | 097 | 8 | 19 | 3 | 6 | 29 | 29 | 29 |
| 4 | 65 | 74 | 85 | 94 | 94 | 94 | 9 | 18 | 1 | 4 | 7 | 7 | 7 |
| ·55 | ·062 | ·072 | ·082 | ·091 | ·091 | ·091 | ·80 | ·017 | ·020 | ·023 | ·025 | ·025 | ·025 |
| 6 | 60 | 69 | 79 | 88 | 88 | 88 | 1 | 16 | 18 | 21 | 23 | 23 | 23 |
| 7 | 58 | 66 | 76 | 85 | 85 | 85 | 2 | 14 | 16 | 19 | 21 | 21 | 21 |
| 8 | 56 | 64 | 73 | 82 | 82 | 82 | 3 | 13 | 15 | 17 | 19 | 19 | 19 |
| 9 | 54 | 62 | 71 | 79 | 79 | 79 | 4 | 12 | 14 | 16 | 17 | 18 | 18 |
| ·60 | ·052 | ·060 | ·069 | ·076 | ·076 | ·076 | ·85 | ·011 | ·013 | ·015 | ·015 | ·015 | ·015 |
| 1 | 50 | 57 | 6 | 73 | 3 | 3 | 6 | 10 | 11 | 13 | 14 | 14 | 14 |
| 2 | 48 | 5 | 3 | 70 | 70 | 70 | 7 | 9 | 10 | 11 | 12 | 12 | 12 |
| 3 | 46 | 3 | 60 | 67 | 67 | 67 | 8 | 8 | 9 | 10 | 11 | 11 | 11 |
| 4 | 44 | 51 | 58 | 4 | 4 | 4 | 9 | 7 | 8 | 9 | 10 | 10 | 10 |
| ·65 | ·042 | ·049 | ·056 | ·062 | ·062 | ·062 | ·90 | ·006 | ·007 | ·008 | ·009 | ·009 | ·009 |
| 6 | 40 | 6 | 3 | 59 | 59 | 59 | 1 | 5 | 6 | 7 | 7 | 7 | 7 |
| 7 | 38 | 4 | 50 | 6 | 6 | 6 | 2 | 4 | 5 | 6 | 6 | 6 | 6 |
| 8 | 6 | 2 | 47 | 3 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 |
| 9 | 4 | 40 | 5 | 50 | 50 | 50 | 4 | 2 | 3 | 4 | 4 | 4 | 4 |
| ·70 | ·033 | ·038 | ·043 | ·048 | ·048 | ·048 | ·95 | 2 | 3 | 3 | 3 | 3 | 3 |
| 1 | 31 | 6 | 0 | 5 | 5 | 5 | 6 | 1 | 2 | 2 | 2 | 2 | 2 |
| 2 | 29 | 4 | 38 | 3 | 3 | 3 | 7 | 1 | 2 | 2 | 2 | 2 | 2 |
| 3 | 7 | 2 | 6 | 40 | 40 | 40 | 8 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4 | 6 | 30 | 4 | 38 | 38 | 38 | 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| ·75 | ·025 | ·029 | ·032 | ·036 | ·036 | ·036 | 1·00 | 0 | 0 | 0 | 0 | 0 | 0 |

N.B.—When either of the two first places of decimals is not filled in, it must be understood that no change has taken place from the line next above in which the figures are filled in.

## TABLE V.

SHOWING for all VALUES of $\tau$ between $t$ and T the LOGARITHM of the COEFFICIENT, corresponding to LOG. $\frac{\tau - t}{T - t}$, which when added to LOG. $(T - t)$ will give the LOG. E.

| Log. $\frac{\tau - t}{T - t}$ | Jan. / Dec. | Feb. / Nov. | March / Oct. | April / Sept. | May / Aug. | June / July. |
|---|---|---|---|---|---|---|
| −∞ | $\bar{1}$·716 | $\bar{1}$·698 | $\bar{1}$·686 | $\bar{1}$·678 | $\bar{1}$·672 | $\bar{1}$·668 |
| −2·10 | 11 | 93 | 81 | 73 | 67 | 63 |
| ·20 | 06 | 88 | 76 | 68 | 62 | 58 |
| ·30 | ·701 | 83 | 71 | 63 | 57 | 53 |
| ·40 | ·695 | 77 | 65 | 57 | 51 | 47 |
| ·50 | 88 | 70 | 58 | 50 | 44 | 39 |
| ·60 | 80 | 62 | 50 | 41 | 35 | 31 |
| ·70 | 71 | 53 | 41 | 32 | 26 | 21 |
| ·80 | 59 | 41 | 29 | 20 | ·613 | ·608 |
| ·90 | 45 | 27 | ·615 | ·605 | ·599 | ·593 |
| −1·00 | $\bar{1}$·628 | $\bar{1}$·610 | $\bar{1}$·598 | $\bar{1}$·588 | $\bar{1}$·581 | $\bar{1}$·575 |
| ·01 | 26 | 08 | 96 | 86 | 79 | 73 |
| 2 | 24 | 06 | 94 | 84 | 77 | 71 |
| 3 | 23 | 04 | 92 | 82 | 75 | 69 |
| 4 | 20 | ·601 | 89 | 79 | 72 | 66 |
| 5 | 17 | ·598 | 85 | 76 | 69 | 63 |
| 6 | 15 | 96 | 83 | 74 | 67 | 61 |
| 7 | 13 | 93 | 80 | 72 | 64 | 58 |
| 8 | 10 | 90 | 78 | 69 | 61 | 55 |
| 9 | 07 | 87 | 75 | 66 | 58 | 52 |
| −1·10 | $\bar{1}$·604 | $\bar{1}$·584 | $\bar{1}$·572 | $\bar{1}$·563 | $\bar{1}$·556 | $\bar{1}$·550 |
| 1 | ·601 | 81 | 69 | 60 | 53 | 47 |
| 2 | ·598 | 78 | 66 | 57 | 50 | 44 |
| 3 | 95 | 75 | 63 | 54 | 47 | 41 |
| 4 | 92 | 72 | 60 | 52 | 44 | 38 |
| 5 | 89 | 68 | 58 | 49 | 42 | 35 |
| 6 | 85 | 64 | 54 | 46 | 39 | 32 |
| 7 | 82 | 61 | 51 | 43 | 36 | 29 |
| 8 | 78 | 57 | 47 | 39 | 32 | 26 |
| 9 | 74 | 53 | 43 | 35 | 28 | 23 |
| −1·20 | $\bar{1}$·571 | $\bar{1}$·550 | $\bar{1}$·539 | $\bar{1}$·531 | $\bar{1}$·525 | $\bar{1}$·519 |
| 1 | 67 | 46 | 36 | 28 | 21 | 15 |
| 2 | 63 | 42 | 32 | 24 | 17 | 11 |
| 3 | 59 | 38 | 28 | 20 | 13 | 07 |
| 4 | 55 | 34 | 24 | 16 | 09 | ·503 |
| 5 | 50 | 29 | 20 | 12 | 05 | ·498 |
| 6 | 45 | 25 | 16 | 07 | ·501 | 94 |
| 7 | 40 | 20 | 11 | ·502 | ·496 | 90 |
| 8 | 35 | 15 | 06 | ·497 | 92 | 86 |
| 9 | 30 | 10 | ·501 | 92 | 87 | 81 |
| −1·30 | $\bar{1}$·525 | $\bar{1}$·505 | $\bar{1}$·496 | $\bar{1}$·487 | $\bar{1}$·481 | $\bar{1}$·476 |
| 1 | 19 | ·499 | 90 | 82 | 76 | 71 |
| 2 | 13 | 94 | 85 | 76 | 71 | 66 |
| 3 | 07 | 88 | 80 | 70 | 65 | 60 |
| 4 | ·501 | 82 | 74 | 64 | 59 | 55 |
| 5 | ·495 | 76 | 67 | 58 | 53 | 49 |
| 6 | 89 | 70 | 61 | 52 | 47 | 43 |
| 7 | 83 | 64 | 55 | 46 | 41 | 36 |
| 8 | 77 | 58 | 48 | 40 | 35 | 30 |
| 9 | 71 | 51 | 41 | 34 | 29 | 24 |
| −1·40 | $\bar{1}$·464 | $\bar{1}$·443 | $\bar{1}$·435 | $\bar{1}$·428 | $\bar{1}$·423 | $\bar{1}$·418 |
| −1·40 | $\bar{1}$·464 | $\bar{1}$·443 | $\bar{1}$·435 | $\bar{1}$·428 | $\bar{1}$·423 | $\bar{1}$·418 |
| 1 | 56 | 35 | 27 | 20 | 16 | 11 |
| 2 | 48 | 26 | 18 | 12 | 08 | ·404 |
| 3 | 40 | 18 | 10 | ·404 | ·400 | ·396 |
| 4 | 31 | 09 | ·401 | ·396 | ·392 | 89 |
| 5 | 22 | ·401 | ·393 | 87 | 84 | 80 |
| 6 | 12 | ·392 | 84 | 79 | 76 | 72 |
| 7 | ·402 | 83 | 75 | 71 | 68 | 64 |
| 8 | ·392 | 73 | 66 | 63 | 59 | 55 |
| 9 | 82 | 64 | 57 | 54 | 50 | 46 |
| −1·50 | $\bar{1}$·373 | $\bar{1}$·354 | $\bar{1}$·348 | $\bar{1}$·344 | $\bar{1}$·340 | $\bar{1}$·336 |
| 1 | 64 | 42 | 38 | 33 | 30 | 26 |
| 2 | 52 | 30 | 27 | 21 | 18 | 15 |
| 3 | 39 | 17 | 15 | ·309 | ·307 | ·304 |
| 4 | 25 | ·304 | ·302 | ·297 | ·295 | ·293 |
| 5 | ·310 | ·291 | ·289 | 85 | 84 | 82 |
| 6 | ·294 | 78 | 76 | 73 | 72 | 71 |
| 7 | 77 | 65 | 63 | 61 | 60 | 60 |
| 8 | 59 | 51 | 50 | 49 | 48 | 48 |
| 9 | 40 | 36 | 36 | 35 | 35 | 35 |
| $\bar{1}$·60 | $\bar{1}$·221 | $\bar{1}$·220 | $\bar{1}$·220 | $\bar{1}$·221 | $\bar{1}$·221 | $\bar{1}$·221 |
| 1 | ·203 | ·203 | ·204 | ·206 | ·206 | ·206 |
| 2 | ·183 | ·184 | ·188 | ·190 | ·190 | ·190 |
| 3 | 60 | 63 | 71 | 73 | 73 | 73 |
| 4 | 36 | 40 | 53 | 55 | 55 | 55 |
| 5 | ·110 | ·117 | 34 | 36 | 36 | 36 |
| 6 | ·082 | ·094 | ·114 | ·117 | ·117 | ·117 |
| 7 | 50 | 69 | ·094 | ·099 | ·099 | ·099 |
| 8 | $\bar{1}$·015 | 43 | 72 | 80 | 80 | 80 |
| 9 | $\bar{2}$·975 | $\bar{1}$·015 | 49 | 60 | 60 | 60 |
| $\bar{1}$·70 | $\bar{2}$·935 | $\bar{2}$·985 | $\bar{1}$·025 | $\bar{1}$·040 | $\bar{1}$·040 | $\bar{1}$·040 |
| 1 | ·900 | 55 | ·000 | ·019 | ·019 | ·019 |
| 2 | ·865 | ·925 | $\bar{2}$·972 | $\bar{2}$·998 | $\bar{2}$·998 | $\bar{2}$·998 |
| 3 | 32 | ·895 | 45 | 77 | 77 | 77 |
| 4 | ·805 | 65 | ·915 | 56 | 56 | 56 |
| 5 | ·780 | 40 | ·895 | 35 | 35 | 35 |
| 6 | 55 | ·815 | 75 | ·913 | ·913 | ·913 |
| 7 | 32 | ·795 | 50 | ·891 | ·891 | ·891 |
| 8 | ·710 | 75 | 25 | 69 | 69 | 69 |
| 9 | ·685 | 50 | ·800 | 47 | 47 | 47 |
| ·80 | $\bar{2}$·657 | $\bar{2}$·725 | $\bar{2}$·775 | $\bar{2}$·825 | $\bar{2}$·825 | $\bar{2}$·825 |
| 1 | 30 | ·695 | 50 | ·802 | ·802 | ·802 |
| 2 | ·602 | 62 | ·720 | ·775 | ·775 | ·775 |
| 3 | ·570 | ·630 | ·685 | 44 | 44 | 44 |
| 4 | ·535 | ·595 | 50 | ·709 | ·709 | ·709 |
| 5 | ·498 | 60 | ·615 | ·669 | ·669 | ·669 |
| 6 | ·458 | ·520 | ·575 | ·629 | ·629 | ·629 |
| 7 | ·412 | ·480 | ·535 | ·584 | ·584 | ·584 |
| 8 | ·364 | ·435 | ·485 | ·535 | ·535 | ·535 |
| 9 | ·310 | ·385 | ·435 | ·482 | ·482 | ·482 |
| $\bar{1}$·90 | $\bar{2}$·250 | $\bar{2}$·330 | $\bar{2}$·385 | $\bar{2}$·425 | $\bar{2}$·425 | $\bar{2}$·425 |
| 1 | ·185 | ·260 | ·325 | ·363 | ·363 | ·363 |
| 2 | ·120 | ·180 | ·250 | ·286 | ·286 | ·286 |
| 3 | 2·050 | $\bar{2}$·090 | ·160 | ·194 | ·194 | ·194 |
| 4 | $\bar{3}$·945 | $\bar{3}$·990 | $\bar{2}$·060 | $\bar{2}$·087 | $\bar{2}$·087 | $\bar{2}$·087 |
| 5 | $\bar{3}$·830 | ·870 | $\bar{3}$·930 | $\bar{3}$·965 | $\bar{3}$·965 | $\bar{3}$·965 |

## TABLE VI.

## VALUES OF $m$ (T – $t$).

| T – $t$ | January<br>December. | February<br>November. | March<br>October. | April<br>September. | May<br>August. | June<br>July. | T – $t$ |
|---|---|---|---|---|---|---|---|
| 1 | 0·52 | ·5 | 0·49 | 0·48 | 0·47 | 0·47 | 1 |
| 2 | 1·04 | 1·0 | 0·97 | 0·95 | 0·94 | 0·93 | 2 |
| 3 | 1·56 | 1·5 | 1·46 | 1·43 | 1·41 | 1·40 | 3 |
| 4 | 2·08 | 2·0 | 1·94 | 1·90 | 1·88 | 1·86 | 4 |
| 5 | 2·60 | 2·5 | 2·43 | 2·38 | 2·35 | 2·33 | 5 |
| 6 | 3·12 | 3·0 | 2·91 | 2·86 | 2·82 | 2·79 | 6 |
| 7 | 3·64 | 3·5 | 3·40 | 3·33 | 3·29 | 3·26 | 7 |
| 8 | 4·16 | 4·0 | 3·88 | 3·81 | 3·76 | 3·72 | 8 |
| 9 | 4·68 | 4·5 | 4·37 | 4·28 | 4·23 | 4·19 | 9 |
| 10 | 5·20 | 5·0 | 4·85 | 4·76 | 4·70 | 4·65 | 10 |
| 1 | 5·72 | 5·5 | 5·34 | 5·24 | 5·17 | 5·12 | 1 |
| 2 | 6·24 | 6·0 | 5·82 | 5·71 | 5·64 | 5·58 | 2 |
| 3 | 6·76 | 6·5 | 6·31 | 6·19 | 6·11 | 6·05 | 3 |
| 4 | 7·28 | 7·0 | 6·79 | 6·66 | 6·58 | 6·51 | 4 |
| 5 | 7·80 | 7·5 | 7·28 | 7·14 | 7·05 | 6·98 | 5 |
| 6 | 8·32 | 8·0 | 7·76 | 7·62 | 7·52 | 7·44 | 6 |
| 7 | 8·84 | 8·5 | 8·25 | 8·09 | 7·99 | 7·91 | 7 |
| 8 | 9·36 | 9·0 | 8·73 | 8·57 | 8·46 | 8·37 | 8 |
| 9 | 9·88 | 9·5 | 9·22 | 9·04 | 8·93 | 8·84 | 9 |
| 20 | 10·40 | 10·0 | 9·70 | 9·52 | 9·40 | 9·30 | 20 |
| 1 | 10·92 | 10·5 | 10·19 | 10·00 | 9·87 | 9·77 | 1 |
| 2 | 11·44 | 11·0 | 10·67 | 10·47 | 10·34 | 10·23 | 2 |
| 3 | 11·96 | 11·5 | 11·16 | 10·95 | 10·81 | 10·70 | 3 |
| 4 | 12·48 | 12·0 | 11·64 | 11·42 | 11·28 | 11·16 | 4 |
| 5 | 13·00 | 12·5 | 12·13 | 11·90 | 11·75 | 11·63 | 5 |
| 6 | 13·52 | 13·0 | 12·61 | 12·38 | 12·22 | 12·09 | 6 |
| 7 | 14·04 | 13·5 | 13·10 | 12·85 | 12·69 | 12·56 | 7 |
| 8 | 14·56 | 14·0 | 13·58 | 13·33 | 13·16 | 13·02 | 8 |
| 9 | 15·08 | 14·5 | 14·07 | 13·80 | 13·63 | 13·49 | 9 |
| 30 | 15·60 | 15·0 | 14·55 | 14·28 | 14·10 | 13·95 | 30 |
| 1 | 16·12 | 15·5 | 15·04 | 14·76 | 14·57 | 14·42 | 1 |
| 2 | 16·64 | 16·0 | 15·52 | 15·23 | 15·04 | 14·88 | 2 |
| 3 | 17·16 | 16·5 | 16·01 | 15·71 | 15·51 | 15·35 | 3 |
| 4 | 17·68 | 17·0 | 16·49 | 16·18 | 15·98 | 15·71 | 4 |
| 5 | 18·20 | 17·5 | 16·98 | 16·66 | 16·45 | 16·28 | 5 |
| 6 | 18·72 | 18·0 | 17·46 | 17·14 | 16·92 | 16·74 | 6 |
| 7 | 19·24 | 18·5 | 17·95 | 17·61 | 17·39 | 17·21 | 7 |
| 8 | 19·76 | 19·0 | 18·43 | 18·09 | 17·86 | 17·67 | 8 |
| 9 | 20·28 | 19·5 | 18·92 | 18·56 | 18·33 | 18·14 | 9 |
| 40 | 20·80 | 20·0 | 19·40 | 19·04 | 18·80 | 18·60 | 40 |

## TABLE VII.

### DAILY VALUES of E and *e*, reckoned above and below 42° F., calculated, by aid of TABLES V. and VI., from DAILY TEMPERATURES for NINE MONTHS from JANUARY to SEPTEMBER 1881, at KEW, compared with the OBSERVED VALUES. —Day Degrees.

| DAY. | JANUARY. | | | | FEBRUARY. | | | | MARCH. | | | | APRIL. | | | | MAY. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Observed. | | Calculated. | | Observed. | | Calculated. | | Observed. | | Calculated. | | Observed. | | Calculated. | | Observed. | | Calculated. | |
| | E. | *e*. | E. | *e*. | E. | *e*. | E. | *e*. | E. | *e*. | E. | *e*. | E. | *e*. | E. | *e*. | E. | *e*. | E. | *e*. |
| 1 | | 4·1 | | 4·7 | — | 6·8 | | 6·5 | — | 10·3 | | 9·4 | 2·5 | 2·7 | 2·3 | 2·4 | 8·4 | | 8·9 | |
| 2 | | 0·8 | | 1·3 | 2·9 | 1·5 | 1·3 | 1·7 | 0·1 | 7·6 | 0·2 | 6·8 | 1·4 | 2·0 | 1·5 | 1·3 | 8·0 | | 7·2 | |
| 3 | 0·3 | 1·2 | 0·1 | 1·0 | 7·0 | — | 7·6 | — | — | 4·7 | — | 5·9 | — | 5·2 | 0·1 | 4·3 | 2·5 | 0·6 | 1·4 | 1·7 |
| 4 | | 2·1 | | 2·8 | 5·4 | — | 5·6 | — | 1·9 | 1·7 | 1·2 | 1·0 | 0·6 | 4·7 | 0·6 | 4·6 | 6·2 | 2·2 | 4·0 | 2·6 |
| 5 | 0·1 | 1·4 | 0·1 | 1·5 | 1·3 | 0·8 | 0·6 | 1·1 | 8·2 | | 8·4 | — | 1·1 | 3·4 | 1·1 | 2·7 | 11·0 | 0·1 | 10·1 | — |
| 6 | | 3·8 | | 3·4 | — | 6·6 | — | 7·0 | 9·8 | | 9·8 | — | 1·6 | 3·1 | 1·3 | 2·5 | 15·1 | | 15·1 | |
| 7 | | 6·8 | | 5·8 | 0·4 | 7·6 | 0·5 | 6·1 | 10·1 | | 10·2 | | 1·6 | 3·3 | 1·1 | 2·7 | 13·4 | | 11·6 | |
| 8 | | 7·9 | | 7·8 | 4·5 | — | 3·8 | — | 3·7 | — | 3·5 | | 2·1 | 3·7 | 1·2 | 3·1 | 10·6 | | 10·3 | |
| 9 | | 6·6 | | 6·1 | 1·6 | 0·2 | 1·2 | 0·1 | 7·2 | | 5·9 | 0·1 | 3·3 | 0·9 | 3·6 | 1·1 | 6·0 | 0·5 | 5·5 | 0·6 |
| 10 | | 8·0 | | 7·9 | 4·7 | 0·2 | 3·8 | 0·1 | 11·0 | | 12·5 | — | 5·1 | 1·6 | 5·8 | 1·0 | 3·8 | 4·6 | 4·1 | 0·7 |
| 11 | | 9·0 | | 8·7 | — | 4·4 | — | 4·2 | 8·5 | | 8·3 | — | 8·8 | 0·6 | 7·9 | 0·2 | 5·7 | 1·8 | 4·6 | 2·1 |
| 12 | | 13·5 | | 14·4 | — | 7·3 | — | 7·1 | 4·0 | 0·1 | 4·7 | 0·1 | 10·2 | — | 10·6 | | 9·4 | 0·8 | 8·4 | 0·7 |
| 13 | | 15·6 | | 15·2 | — | 7·2 | | 8·1 | 1·9 | 0·6 | 3·3 | 0·6 | 12·5 | — | 15·0 | | 12·8 | 0·2 | 12·5 | 0·1 |
| 14 | | 22·2 | | 22·9 | — | 3·9 | — | 3·8 | 1·3 | 1·2 | 1·3 | 1·2 | 11·0 | — | 11·3 | | 12·9 | | 11·1 | |
| 15 | | 24·1 | | 23·8 | 0·1 | 3·0 | 0·1 | 4·3 | 2·3 | 2·5 | 2·5 | 1·5 | 9·5 | | 9·8 | | 12·0 | | 12·5 | |
| 16 | | 20·9 | | 20·2 | 0·1 | 5·2 | 0·1 | 4·9 | 3·2 | 3·6 | 3·4 | 2·1 | 6·3 | 0·1 | 6·8 | 0·3 | 8·3 | — | 6·9 | |
| 17 | | 21·0 | | 21·6 | | 4·6 | — | 4·3 | 5·2 | 2·6 | 4·5 | 2·0 | 10·7 | 0·1 | 9·4 | 0·2 | 8·3 | 0·7 | 5·2 | 1·2 |
| 18 | | 13·0 | | 12·7 | 0·9 | 0·8 | 0·7 | 0·8 | 5·7 | 0·6 | 7·2 | 0·7 | 8·4 | 0·6 | 8·0 | 0·5 | 12·0 | — | 13·6 | |
| 19 | | 14·3 | | 13·6 | | 3·6 | — | 2·4 | 5·4 | 0·2 | 5·6 | 0·5 | — | 2·3 | — | 2·8 | 11·8 | | 12·3 | |
| 20 | | 19·9 | | 19·7 | | 4·8 | | 6·0 | 4·1 | 0·6 | 4·3 | 0·6 | — | 4·6 | — | 5·1 | 10·9 | | 9·7 | |
| 21 | | 19·3 | | 19·8 | | 8·8 | | 10·1 | 0·3 | 2·7 | 0·7 | 3·5 | 0·5 | 5·1 | 0·5 | 5·1 | 12·1 | — | 11·5 | 0·3 |
| 22 | | 18·5 | | 17·5 | | 9·3 | | 9·6 | 0·3 | 6·4 | 0·6 | 4·7 | 1·6 | 2·4 | 1·7 | 2·5 | 14·4 | — | 11·6 | 0·1 |
| 23 | | 9·5 | | 10·4 | | 8·4 | | 7·8 | 1·3 | 3·5 | 1·1 | 5·3 | 4·5 | 1·2 | 3·8 | 1·7 | 18·0 | | 16·9 | |
| 24 | | 15·1 | | 15·8 | | 5·8 | | 5·3 | 3·8 | 0·2 | 2·7 | 0·5 | 7·3 | — | 7·4 | — | 16·3 | | 15·8 | |
| 25 | | 18·2 | | 18·3 | | 7·1 | | 7·8 | 0·3 | 3·5 | 0·5 | 4·3 | 10·9 | — | 11·3 | — | 16·7 | | 17·5 | |
| 26 | | 16·6 | | 15·0 | | 7·3 | | 7·2 | 0·1 | 6·5 | 0·3 | 5·4 | 5·1 | 0·1 | 5·3 | 0·2 | 17·2 | | 15·7 | |
| 27 | | 4·0 | | 3·6 | | 8·9 | | 8·6 | — | 6·9 | 0·2 | 7·4 | 6·7 | 0·2 | 6·1 | 0·3 | 19·2 | | 19·2 | |
| 28 | | 3·7 | | 2·7 | | 11·7 | | 11·1 | 0·6 | 5·1 | 0·7 | 5·0 | 6·7 | 0·5 | 6·5 | 0·6 | 19·9 | | 20·9 | |
| 29 | 2·6 | 0·0 | 2·4 | 0·0 | | | | | 2·0 | 5·4 | 2·3 | 3·5 | 10·3 | — | 10·6 | — | 14·8 | | 15·7 | |
| 30 | 2·5 | 0·0 | 3·3 | 0·7 | | | | | 0·2 | 6·4 | 0·4 | 6·6 | 11·6 | — | 11·4 | — | 17·2 | | 15·7 | |
| 31 | 1·2 | 3·1 | 1·0 | 1·3 | | | | | 0·3 | 3·9 | 0·6 | 3·6 | | | | | 21·1 | | 18·4 | |
| Monthly Sum | 6·7 | 325·1 | 6·9 | 320·2 | 28·9 | 135·8 | 25·3 | 136·0 | 102·8 | 86·8 | 106·9 | 82·3 | 161·9 | 48·7 | 162·0 | 45·2 | 376·0 | 7·5 | 353·9 | 10·1 |
| Sum from 1st January - | | - | - | - | 35·6 | 460·9 | 32·2 | 456·2 | 138·4 | 547·7 | 139·1 | 538·5 | 300·3 | 596·4 | 301·1 | 583·7 | 676·3 | 603·9 | 655·0 | 593·8 |

## TABLE VII.—*continued.*

### DAILY VALUES of E and *e*, reckoned above and below 42° F., &c.—*continued.*

| DAY. | JUNE. | | | | JULY. | | | | AUGUST. | | | | SEPTEMBER. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Observed. | | Calculated. | | Observed. | | Calculated. | | Observed. | | Calculated. | | Observed. | | Calculated. | |
| | E. | *e.* | E. | *e.* | E. | *e.* | E. | *e.* | E. | *e.* | E. | *e.* | E. | *e.* | E. | *e.* |
| 1 | 21·5 | | 20·0 | | 24·0 | | 21·9 | — | 18·8 | | 17·9 | | 10·1 | | 9·9 | |
| 2 | 21·8 | | 20·6 | | 23·4 | | 23·4 | | 20·3 | | 20·5 | | 12·6 | | 13·0 | |
| 3 | 23·3 | | 21·8 | | 25·5 | | 24·4 | | 19·7 | | 17·7 | | 13·8 | | 13·9 | |
| 4 | 23·6 | | 23·7 | | 30·9 | | 31·1 | | 24·3 | | 25·5 | | 12·8 | | 13·2 | |
| 5 | 14·5 | | 14·7 | | 33·7 | | 32·5 | | 24·8 | | 23·4 | | 14·3 | | 13·4 | |
| 6 | 9·4 | | 10·4 | | 21·2 | | 17·8 | | 20·7 | | 20·7 | | 16·2 | | 17·3 | |
| 7 | 6·1 | | 7·7 | | 16·1 | | 14·9 | | 19·3 | | 17·8 | | 15·8 | | 16·2 | |
| 8 | 5·6 | | 6·1 | | 14·6 | | 15·5 | | 20·7 | | 20·1 | | 13·4 | | 13·3 | |
| 9 | 5·7 | 0·4 | 4·5 | 0·6 | 16·7 | | 15·3 | | 17·8 | | 19·2 | | 15·2 | | 14·8 | |
| 10 | 8·9 | | 8·6 | | 21·2 | | 21·6 | | 18·0 | | 19·0 | | 12·0 | | 10·6 | |
| 11 | 12·9 | | 12·8 | | 24·6 | | 23·7 | | 17·4 | | 16·6 | | 12·6 | | 13·0 | |
| 12 | 17·3 | | 17·5 | | 25·7 | | 23·7 | | 14·2 | | 14·1 | | 13·8 | | 14·4 | |
| 13 | 16·7 | | 17·8 | | 23·6 | | 22·0 | | 12·3 | | 11·1 | | 14·0 | | 15·3 | |
| 14 | 16·4 | | 17·1 | | 28·6 | | 28·7 | | 15·2 | | 15·6 | | 13·4 | | 13·7 | |
| 15 | 18·5 | | 17·4 | | 34·0 | | 31·9 | | 15·3 | | 15·4 | | 11·7 | | 12·7 | |
| 16 | 19·6 | | 20·6 | | 29·0 | | 28·6 | | 18·3 | | 19·1 | | 9·5 | 0·1 | 9·8 | 0·1 |
| 17 | 21·1 | | 22·0 | | 28·8 | | 28·0 | | 15·9 | | 17·1 | | 14·9 | | 12·8 | |
| 18 | 19·5 | | 20·6 | | 30·6 | | 30·3 | | 17·1 | | 17·6 | | 19·6 | | 20·2 | |
| 19 | 18·5 | | 19·8 | | 31·2 | | 29·4 | | 16·3 | | 16·6 | | 18·0 | | 16·3 | |
| 20 | 19·4 | | 19·8 | | 23·4 | | 22·6 | | 14·4 | | 14·3 | | 17·4 | | 16·2 | |
| 21 | 21·3 | | 21·5 | | 18·3 | | 18·0 | | 12·4 | | 12·3 | | 17·0 | | 15·6 | |
| 22 | 19·4 | | 18·7 | | 17·1 | | 16·1 | | 15·2 | | 13·2 | | 11·9 | | 12·0 | |
| 23 | 18·2 | | 17·9 | | 20·7 | | 20·2 | | 17·4 | | 19·4 | | 14·5 | | 14·3 | |
| 24 | 19·1 | | 18·8 | | 21·8 | | 20·8 | | 15·5 | | 15·5 | | 16·6 | | 17·9 | |
| 25 | 14·2 | | 12·8 | | 16·5 | | 16·2 | | 16·8 | | 14·7 | | 17·7 | | 16·4 | |
| 26 | 18·4 | | 16·6 | | 16·6 | | 17·9 | | 18·3 | | 17·5 | | 13·0 | | 13·5 | |
| 27 | 15·8 | | 16·2 | | 14·3 | | 15·3 | | 13·4 | | 12·8 | | 10·7 | | 11·9 | |
| 28 | 16·5 | | 15·0 | | 15·9 | | 14·9 | | 12·0 | | 10·8 | | 8·9 | | 9·5 | |
| 29 | 18·1 | | 18·0 | | 21·3 | | 21·0 | | 15·2 | | 13·9 | | 8·3 | 0·2 | 9·0 | 0·2 |
| 30 | 19·0 | | 16·7 | | 19·9 | | 19·7 | | 16·3 | | 16·4 | | 6·9 | 0·3 | 8·5 | 0·3 |
| 31 | | | | | 19·7 | | 19·8 | | 10·3 | | 10·9 | | | | | |
| Monthly Sum - | 500·3 | 0·4 | 495·7 | 0·6 | 708·9 | — | 687·2 | — | 523·6 | — | 516·7 | — | 406·6 | 0·6 | 408·6 | 0·6 |
| Sum from 1st January | 1176·6 | 604·3 | 1150·7 | 594·4 | 1885·5 | 604·3 | 1837·9 | 594·4 | 2409·1 | 604·3 | 2354·6 | 594·4 | 2815·7 | 604·9 | 2763·2 | 595·0 |

# TABLE VIII.

## VALUES of E and *e*, reckoned above and below various BASE TEMPERATURES, calculated from WEEKLY MEANS of TEMPERATURE for NINE MONTHS of the YEAR 1881 at KEW, with APPROXIMATE COEFFICIENT *p*, compared with the OBSERVED VALUES.

| MONTH. | | OBSERVED. | | | | | | | | | | | | | | | | CALCULATED. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Weekly Means. | | | | | | Progressive Values in Day-Degrees. | | | | | | | | Mean. | Progressive Values in Day-Degrees. | | | | | | | |
| | | | | | | | | E above τ. | | | | *e* below τ. | | | | | E above τ. | | | | *e* below τ. | | | |
| | | T − *t*. | 32° − *t*. | 42° − *t*. | 52° − *t*. | 62° − *t*. | Θ − *t*. | 32°. | 42°. | 52° | 62°. | 32°. | 42°. | 52°. | 62°. | *m* × T − *t*. | 32°. | 42°. | 52°. | 62°. | 32°. | 42°. | 52°. | 62°. |
| January | 1 to 7 | 6·1 | − 4·9 | + 6·1 | | | 3·3 | 50 | — | | | — | 20 | | | 3·2 | 57 | — | | | — | 20 | | |
| | „ 14 | 9·2 | + 5·9 | 15·9 | | | 4·1 | 60 | — | | | 22 | 103 | | | 4·8 | 66 | — | | | 17 | 98 | | |
| | „ 21 | 11·7 | +14·9 | 24·9 | | | 5·9 | 60 | — | | | 84 | 236 | | | 6·1 | 66 | — | | | 79 | 229 | | |
| | „ 28 | 10·1 | + 7·2 | 17·2 | | | 4·9 | 74 | — | | | 113 | 321 | | | 5·3 | 74 | — | | | 101 | 313 | | |
| February | „ 4 | 8·0 | − 7·5 | 2·5 | | | 4·0 | 154 | 22 | | | 113 | 333 | | | 4·0 | 155 | 18 | | | 101 | 320 | | |
| | „ 11 | 9·5 | − 4·0 | 6·0 | | | 5·0 | 218 | 35 | | | 114 | 353 | | | 4·8 | 217 | 26 | | | 101 | 337 | | |
| | „ 18 | 9·4 | − 0·6 | 9·4 | | | 4·9 | 259 | 36 | | | 116 | 385 | | | 4·7 | 254 | 26 | | | 101 | 370 | | |
| | „ 25 | 5·0 | − 0·5 | 9·5 | | | 2·7 | 282 | 36 | | | 117 | 433 | | | 2·5 | 275 | 26 | | | 101 | 419 | | |
| March | „ 4 | 11·0 | + 2·3 | +12·3 | +22·5 | | 5·2 | 308 | 38 | | | 123 | 485 | 120 | | 5·3 | 302 | 26 | | | 107 | 468 | 120 | |
| | „ 11 | 9·9 | −13·5 | − 3·5 | 6·5 | | 4·8 | 436 | 96 | 5 | | 123 | 485 | 136 | | 4·8 | 430 | 84 | 8 | | 107 | 468 | 140 | |
| | „ 18 | 17·5 | − 4·2 | + 5·8 | 15·8 | | 7·6 | 519 | 120 | 7 | | 123 | 496 | 196 | | 8·5 | 519 | 119 | 12 | | 107 | 484 | 195 | |
| | „ 25 | 13·8 | − 2·7 | + 7·3 | 17·3 | | 7·0 | 588 | 135 | 8 | | 123 | 514 | 269 | | 6·7 | 585 | 135 | 12 | | 107 | 504 | 269 | |
| April | „ 1 | 16·1 | + 1·8 | +11·8 | 21·8 | | 7·3 | 629 | 141 | 8 | | 126 | 550 | 370 | | 7·8 | 632 | 147 | 12 | | 112 | 544 | 367 | |
| | „ 8 | 13·8 | | + 8·6 | 18·6 | | 6·4 | | 149 | 8 | | | 576 | 457 | | 6·6 | | 162 | 12 | | | 573 | 451 | |
| | „ 15 | 17·2 | | − 0·6 | 9·4 | | 7·6 | | 210 | 21 | | | 579 | 482 | | 8·2 | | 223 | 28 | | | 573 | 478 | |
| | „ 22 | 14·5 | | + 6·2 | 16·2 | | 8·0 | | 237 | 28 | | | 594 | 546 | | 6·9 | | 246 | 28 | | | 590 | 543 | |
| | „ 29 | 16·1 | | + 0·7 | 10·7 | | 7·8 | | 289 | 35 | | | 596 | 574 | | 7·7 | | 297 | 41 | | | 592 | 577 | |
| May | „ 6 | 17·7 | | + 0·6 | 10·6 | +20·6 | 9·2 | | 352 | 49 | 1 | | 599 | 598 | 81 | 8·3 | | 352 | 58 | — | | 594 | 610 | 86 |
| | „ 13 | 22·9 | | + 3·2 | 13·2 | 23·2 | 11·5 | | 413 | 69 | 2 | | 603 | 630 | 165 | 10·8 | | 414 | 80 | — | | 603 | 649 | 173 |
| | „ 20 | 15·9 | | − 2·5 | 7·5 | 17·5 | 8·3 | | 489 | 86 | 3 | | 604 | 641 | 229 | 7·5 | | 484 | 98 | — | | 603 | 667 | 243 |
| | „ 27 | 19·5 | | − 6·3 | 3·7 | 13·7 | 9·9 | | 603 | 135 | 10 | | 604 | 647 | 262 | 9·2 | | 593 | 145 | 11 | | 603 | 675 | 285 |
| June | „ 3 | 23·4 | | − 8·1 | 1·9 | 11·9 | 11·9 | | 743 | 207 | 35 | | 604 | 649 | 287 | 11·0 | | 727 | 213 | 31 | | 603 | 679 | 312 |
| | „ 10 | 14·5 | | − 3·9 | + 6·1 | 16·1 | 6·5 | | 817 | 228 | 40 | | 604 | 666 | 359 | 6·7 | | 801 | 231 | 31 | | 603 | 693 | 378 |
| | „ 17 | 16·5 | | −10·2 | − 0·2 | 9·8 | 7·3 | | 939 | 282 | 49 | | 604 | 668 | 386 | 7·7 | | 926 | 286 | 43 | | 603 | 693 | 405 |
| | „ 24 | 16·5 | | −11·9 | − 1·9 | 8·1 | 7·5 | | 1075 | 348 | 63 | | 604 | 668 | 403 | 7·7 | | 1063 | 353 | 58 | | 603 | 693 | 423 |
| July | „ 1 | 18·7 | | − 8·1 | + 1·9 | 11·9 | 10·7 | | 1201 | 405 | 77 | | 604 | 670 | 431 | 8·7 | | 1181 | 405 | 70 | | 603 | 693 | 457 |
| | „ 8 | 19·5 | | 13·7 | − 3·7 | 6·3 | 9·9 | | 1366 | 501 | 115 | | 604 | 670 | 444 | 9·1 | | 1341 | 495 | 101 | | 603 | 693 | 468 |
| | „ 15 | 23·2 | | 13·1 | 3·1 | 6·9 | 11·9 | | 1540 | 608 | 161 | | 604 | 673 | 455 | 10·8 | | 1508 | 592 | 140 | | 603 | 693 | 480 |
| | „ 22 | 19·4 | | 15·7 | 5·7 | 4·3 | 9·8 | | 1719 | 716 | 207 | | 604 | 673 | 463 | 9·0 | | 1681 | 695 | 181 | | 603 | 693 | 488 |
| | „ 29 | 17·0 | | 10·2 | 0·2 | 9·8 | 8·0 | | 1846 | 775 | 218 | | 604 | 675 | 486 | 7·9 | | 1808 | 752 | 197 | | 603 | 693 | 517 |
| August | „ 5 | 17·9 | | 12·2 | 2·2 | 7·8 | 8·8 | | 1993 | 853 | 240 | | 604 | 675 | 501 | 8·4 | | 1952 | 826 | 215 | | 603 | 693 | 531 |
| | „ 12 | 16·1 | | 10·6 | 0·6 | 9·4 | 7·7 | | 2122 | 911 | 251 | | 604 | 675 | 525 | 7·6 | | 2079 | 883 | 227 | | 603 | 693 | 556 |
| | „ 19 | 10·9 | | 11·0 | − 1·0 | 9·0 | 4·8 | | 2232 | 952 | 254 | | 604 | 676 | 556 | 5·1 | | 2192 | 926 | 231 | | 603 | 693 | 587 |
| | „ 26 | 14·8 | | 8·3 | + 1·7 | 11·7 | 7·4 | | 2342 | 994 | 256 | | 604 | 678 | 589 | 7·0 | | 2299 | 967 | 237 | | 603 | 697 | 626 |
| September | „ 2 | 11·8 | | 6·9 | 3·1 | 13·1 | 5·9 | | 2432 | 1019 | 257 | | 604 | 682 | 639 | 5·5 | | 2386 | 991 | 237 | | 603 | 704 | 679 |
| | „ 9 | 13·3 | | 8·2 | 1·8 | 11·8 | 6·3 | | 2533 | 1053 | 258 | | 604 | 685 | 679 | 6·3 | | 2488 | 1027 | 240 | | 603 | 708 | 720 |
| | „ 16 | 13·1 | | 6·5 | 3·5 | 13·5 | 5·9 | | 2620 | 1077 | 259 | | 604 | 692 | 733 | 6·2 | | 2577 | 1054 | 240 | | 603 | 716 | 771 |
| | „ 23 | 14·4 | | 8·5 | 1·5 | 11·5 | 7·7 | | 2734 | 1122 | 262 | | 604 | 693 | 763 | 6·9 | | 2685 | 1095 | 245 | | 603 | 720 | 808 |
| | „ 30 | 18·0 | | − 3·7 | + 6·3 | +16·3 | 7·9 | | 2816 | 1150 | 264 | | 605 | 710 | 823 | 8·6 | | 2771 | 1126 | 248 | | 603 | 734 | 865 |

## TABLE IX.

VALUES of E and *e*, reckoned above and below 42° F., calculated from the FIVE-DAY MEANS of TEMPERATURE for the Year 1873 at KEW, with APPROXIMATE COEFFICIENT *p*, compared with the OBSERVED VALUES.

| MONTH. | Five-Day Means. | | | | | | | | Progressive Values in Day-Degrees. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Observed. | | | | | Calculated. | | | Observed. | | Calculated. | |
| | T − *t*. | 42° − *t*. | ⊙ − *t*. | E. | *e*. | *m*(T − *t*). | E. | *e*. | E. | *e*. | E. | *e*. |
| January 1 to 5 - - | 7·6 | − 0·2 | 3·3 | 3·6 | 0·1 | 4·0 | 4·2 | — | 18·0 | 0·5 | 21·0 | — |
| „ 10 - - | 4·7 | − 4·4 | 2·1 | 6·3 | — | 2·4 | 6·8 | — | 49·5 | 0·5 | 55·0 | — |
| „ 15 - - | 5·1 | − 4·4 | 2·3 | 6·2 | — | 2·7 | 7·1 | — | 80·5 | 0·5 | 90·5 | — |
| „ 20 - - | 9·0 | + 4·2 | 6·0 | 2·7 | 1·5 | 4·7 | 1·9 | 1·4 | 94·0 | 8·0 | 100·0 | 7·0 |
| „ 25 - - | 11·1 | 10·8 | 5·6 | 0·1 | 5·9 | 5·8 | 0·1 | 5·1 | 94·5 | 37·5 | 100·5 | 32·5 |
| „ 30 - - | 7·6 | 11·4 | 3·6 | — | 8·3 | 4·0 | | 7·4 | 94·5 | 79·0 | 100·5 | 69·5 |
| February „ 4 - - | 5·4 | 11·9 | 2·8 | — | 9·5 | 2·9 | | 9·0 | 94·5 | 126·5 | 100·5 | 114·5 |
| „ 9 - - | 4·1 | 9·0 | 1·7 | — | 7·7 | 2·1 | | 6·9 | 94·5 | 165·0 | 100·5 | 149·0 |
| „ 14 - - | 8·4 | 7·7 | 2·9 | 0·2 | 5·2 | 4·2 | 0·2 | 3·7 | 95·5 | 191·0 | 101·5 | 167·5 |
| „ 19 - - | 5·4 | 9·1 | 3·5 | 0·1 | 6·0 | 2·7 | — | 6·4 | 96·0 | 221·0 | 101·5 | 199·5 |
| „ 24 - - | 9·7 | 13·0 | 3·9 | 0·4 | 9·8 | 4·9 | — | 8·1 | 98·0 | 270·0 | 101·5 | 240·0 |
| March „ 1 - - | 10·2 | 6·5 | 4·2 | 1·3 | 3·8 | 5·1 | 1·2 | 2·6 | 104·5 | 289·0 | 107·5 | 253·0 |
| „ 6 - - | 12·2 | 2·9 | 5·2 | 3·1 | 1·1 | 5·9 | 4·0 | 1·0 | 120·0 | 299·5 | 127·5 | 258·0 |
| „ 11 - - | 11·5 | 5·2 | 5·5 | 1·7 | 1·5 | 5·6 | 2·1 | 1·7 | 128·5 | 302·0 | 138·0 | 266·5 |
| „ 16 - - | 10·0 | 8·6 | 4·0 | 0·1 | 5·0 | 4·9 | 0·5 | 4·2 | 129·0 | 327·0 | 140·5 | 287·5 |
| „ 21 - - | 8·8 | 6·2 | 3·7 | 0·6 | 3·4 | 4·3 | 0·9 | 2·8 | 132·0 | 344·0 | 145·0 | 301·5 |
| „ 26 - - | 19·3 | 6·8 | 8·4 | 3·3 | 2·2 | 9·4 | 4·9 | 2·3 | 148·5 | 355·0 | 169·5 | 313·0 |
| „ 31 - - | 20·3 | 2·4 | 7·7 | 6·3 | 1·5 | 9·8 | 8·2 | 0·8 | 180·0 | 362·5 | 210·5 | 317·0 |
| April „ 5 - - | 15·1 | 1·0 | 7·2 | 6·3 | 0·6 | 7·2 | 6·5 | 0·3 | 211·5 | 365·5 | 243·0 | 318·5 |
| „ 10 - - | 12·3 | + 4·7 | 5·1 | 1·3 | 1·5 | 5·9 | 2·8 | 1·6 | 218·0 | 373·0 | 257·0 | 326·5 |
| „ 15 - - | 15·0 | − 0·9 | 4·8 | 5·9 | 0·4 | 7·1 | 8·0 | — | 247·5 | 375·0 | 297·0 | 326·5 |
| „ 20 - - | 21·1 | − 0·6 | 10·1 | 10·9 | 0·4 | 10·0 | 10·6 | — | 302·0 | 377·0 | 350·0 | 326·5 |
| „ 25 - - | 16·4 | + 8·5 | 8·4 | 2·0 | 2·6 | 7·8 | 2·6 | 3·3 | 312·0 | 390·0 | 363·0 | 343·0 |
| „ 30 - - | 11·5 | − 0·3 | 3·0 | 4·7 | 1·4 | 5·5 | 5·8 | — | 335·5 | 397·0 | 392·0 | 343·0 |
| May „ 5 - - | 17·2 | + 0·2 | 9·0 | 8·6 | 0·3 | 8·1 | 8·0 | 0·1 | 378·5 | 398·5 | 432·0 | 343·5 |
| „ 10 - - | 14·1 | − 2·4 | 5·3 | 7·4 | 0·2 | 6·6 | 9·0 | — | 415·5 | 399·5 | 477·0 | 343·5 |
| „ 15 - - | 18·0 | − 0·1 | 9·7 | 9·8 | 0·3 | 8·5 | 8·6 | — | 464·5 | 401·0 | 520·0 | 343·5 |
| „ 20 - - | 13·4 | 0·4 | 5·0 | 5·9 | 0·7 | 6·3 | 6·7 | — | 494·3 | 404·5 | 553·5 | 343·5 |
| „ 25 - - | 17·2 | 4·1 | 7·4 | 11·4 | 0·2 | 8·1 | 12·2 | — | 551·0 | 405·5 | 614·5 | 343·5 |
| „ 30 - - | 17·4 | 3·8 | 7·7 | 11·6 | — | 8·2 | 12·0 | — | 609·0 | 405·5 | 674·5 | 343·5 |
| June „ 4 - - | 16·6 | 8·0 | 6·1 | 14·0 | — | 7·7 | 15·7 | — | 679·0 | 405·5 | 753·0 | 343·5 |
| „ 9 - - | 16·2 | 6·5 | 8·1 | 14·4 | — | 7·5 | 14·0 | — | 751·0 | 405·5 | 823·0 | 343·5 |
| „ 14 - - | 16·8 | 6·9 | 7·9 | 14·6 | — | 7·8 | 14·7 | — | 824·0 | 405·5 | 896·5 | 343·5 |
| „ 19 - - | 15·7 | 10·9 | 7·2 | 18·0 | — | 7·3 | 18·2 | — | 914·0 | 405·5 | 987·5 | 343·5 |
| „ 24 - - | 16·2 | 13·4 | 7·8 | 21·5 | — | 7·5 | 20·9 | — | 1021·5 | 405·5 | 1092·0 | 343·5 |
| „ 29 - - | 18·0 | −12·1 | 7·8 | 20·3 | — | 8·4 | 20·5 | — | 1123·0 | 405·5 | 1194·5 | 343·5 |

## TABLE IX.—*continued.*

### VALUES of E and $e$, reckoned above and below 42° F., &c.—*continued.*

| MONTH. | Five-Day Means. | | | | | | | | Progressive Values in Day-Degrees. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Observed. | | | | | Calculated. | | | Observed. | | Calculated. | |
| | $T-t$. | $42^\circ-t$. | $\Theta-t$. | E. | $e$. | $m(T-t)$. | E. | $e$. | E. | $e$. | E. | $e$. |
| July to 4 - - | 14·4 | −12·7 | 7·5 | 20·6 | | 6·7 | 19·4 | | 1226·0 | 405·5 | 1291·5 | 343·5 |
| „ 9 - - | 17·9 | 11·8 | 9·1 | 21·0 | | 8·3 | 20·1 | | 1331·0 | 405·5 | 1392·0 | 343·5 |
| „ 14 - - | 14·7 | 11·0 | 7·7 | 18·8 | | 6·8 | 17·8 | | 1425·0 | 405·5 | 1481·0 | 343·5 |
| „ 19 - - | 15·0 | 11·9 | 6·9 | 19·0 | | 7·0 | 18·9 | | 1520·0 | 405·5 | 1575·5 | 343·5 |
| „ 24 - - | 21·5 | 17·3 | 10·4 | 28·0 | | 10·0 | 27·3 | | 1660·0 | 485·5 | 1712·0 | 343·5 |
| „ 29 - - | 19·3 | 13·2 | 8·8 | 22·1 | | 9·0 | 22·2 | | 1770·5 | 405·5 | 1823·0 | 343·5 |
| August „ 3 - - | 16·9 | 13·2 | 8·4 | 21·5 | | 7·9 | 21·1 | | 1878·0 | 405·5 | 1928·5 | 343·5 |
| „ 8 - - | 17·3 | 17·5 | 7·3 | 25·3 | | 8·2 | 25·7 | | 2004·5 | 405·5 | 2057·0 | 343·5 |
| „ 13 - - | 13·0 | 13·6 | 5·9 | 19·9 | | 6·4 | 20·0 | | 2104·0 | 405·5 | 2157·0 | 343·5 |
| „ 18 - - | 17·7 | 13·6 | 7·3 | 21·1 | | 8·3 | 21·9 | | 2209·5 | 405·5 | 2266·5 | 343·5 |
| „ 23 - - | 16·3 | 10·8 | 7·5 | 18·5 | | 7·7 | 18·5 | | 2302·0 | 405·5 | 2359·0 | 343·5 |
| „ 28 - - | 14·6 | 14·1 | 7·0 | 21·6 | | 6·9 | 21·0 | | 2410·0 | 405·5 | 2464·0 | 343·5 |
| September „ 2 - - | 10·9 | 12·7 | 4·7 | 17·5 | | 5·1 | 17·8 | | 2497·5 | 405·5 | 2553·0 | 343·5 |
| „ 7 - - | 13·6 | 4·6 | 6·5 | 11·1 | | 6·5 | 11·1 | | 2553·0 | 405·5 | 2608·5 | 343·5 |
| „ 12 - - | 13·0 | 7·5 | 6·1 | 13·6 | | 6·2 | 13·7 | | 2621·0 | 405·5 | 2677·0 | 345·5 |
| „ 17 - - | 13·1 | 6·4 | 5·6 | 11·9 | | 6·2 | 12·6 | | 2685·0 | 405·5 | 2740·0 | 343·5 |
| „ 22 - - | 14·0 | 6·4 | 6·9 | 13·5 | | 6·7 | 13·1 | | 2748·0 | 405·5 | 2805·5 | 343·5 |
| „ 27 - - | 22·2 | 2·3 | 9·0 | 11·3 | 0·3 | 11·4 | 13·7 | | 2804·5 | 407·0 | 2874·0 | 343·5 |
| October „ 2 - - | 17·0 | 6·3 | 6·2 | 12·3 | — | 8·1 | 14·4 | | 2866·0 | 407·0 | 2946·0 | 343·5 |
| „ 7 - - | 14·2 | 5·9 | 7·7 | 13·6 | 0·6 | 7·8 | 13·7 | | 2934·0 | 410·0 | 3014·5 | 343·5 |
| „ 12 - - | 11·3 | − 5·4 | 4·4 | 10·5 | 0·8 | 5·5 | 10·9 | | 2986·5 | 414·0 | 3069·0 | 343·5 |
| „ 17 - - | 17·1 | + 4·5 | 8·1 | 4·8 | 1·5 | 8·7 | 5·7 | 1·5 | 3010·5 | 421·5 | 3097·5 | 351·0 |
| „ 22 - - | 10·0 | − 3·2 | 4·8 | 8·2 | 0·4 | 4·9 | 8·1 | — | 3051·5 | 423·5 | 3138·0 | 351·0 |
| „ 27 - - | 13·3 | + 7·5 | 7·3 | 1·8 | 2·0 | 6·5 | 1·9 | 2·9 | 3060·5 | 433·5 | 3147·5 | 365·5 |
| November „ 1 - - | 15·3 | + 9·0 | 4·9 | 2·0 | 6·6 | 7·4 | 2·1 | 3·7 | 3070·5 | 466·5 | 3158·0 | 384·0 |
| „ 6 - - | 14·8 | + 5·4 | 7·9 | 4·0 | 1·6 | 7·4 | 3·8 | 1·8 | 3090·5 | 474·5 | 3177·0 | 393·0 |
| „ 11 - - | 6·9 | + 0·6 | 3·8 | 3·3 | 0·2 | 3·5 | 3·1 | 0·2 | 3107·0 | 475·5 | 3192·5 | 394·0 |
| „ 16 - - | 10·5 | + 7·2 | 5·6 | 0·5 | 2·9 | 5·3 | 1·1 | 3·0 | 3109·5 | 490·0 | 3198·0 | 409·0 |
| „ 21 - - | 6·0 | + 1·7 | 2·6 | 1·5 | 0·6 | 3·0 | 1·9 | 0·6 | 3117·0 | 493·0 | 3207·5 | 412·0 |
| „ 26 - - | 10·0 | − 1·3 | 5·7 | 7·4 | 0·6 | 5·0 | 6·3 | — | 3154·0 | 496·0 | 3239·0 | 412·0 |
| December „ 1 - - | 11·1 | + 2·0 | 6·5 | 5·3 | 0·8 | 5·6 | 4·3 | 0·7 | 3180·5 | 500·0 | 3260·5 | 415·5 |
| „ 6 - - | 5·5 | 0·0 | 3·0 | 3·1 | 0·2 | 2·9 | 2·9 | — | 3196·0 | 501·0 | 3275·0 | 415·5 |
| „ 11 - - | 12·0 | +15·6 | 6·1 | 0·7 | 10·7 | 6·2 | — | 9·4 | 3199·5 | 554·5 | 3275·0 | 462·5 |
| „ 16 - - | 8·4 | + 7·8 | 4·5 | 2·3 | 6·1 | 4·4 | 0·2 | 3·6 | 3211·0 | 585·0 | 3276·0 | 480·5 |
| „ 21 - - | 7·4 | − 1·7 | 4·0 | 6·2 | 0·1 | 3·8 | 5·5 | — | 3242·0 | 585·5 | 3303·5 | 480·5 |
| „ 26 - - | 10·3 | + 3·8 | 6·0 | 3·1 | 0·8 | 5·4 | 2·9 | 1·3 | 3257·5 | 589·5 | 3318·0 | 487·0 |
| „ 31 - - | 12·0 | +11·0 | 6·3 | 1·3 | 6·1 | 6·2 | 0·3 | 5·1 | 3264·0 | 620·0 | 3319·5 | 511·5 |

## TABLE X.

VALUES of E, reckoned above 42° F., calculated from the TRUE MEAN TEMPERATURE Θ, and the MEAN of MAXIMUM and MINIMUM, $\frac{1}{2}(T + t)$, compared with the OBSERVED VALUES, from the KEW OBSERVATIONS for 1881, and the CALCULATED VALUES shown in TABLE VIII.

| MONTHS. | | Values of E for Periods of 28 Days. Day Degrees. | | | | Progressive Values of E from 1st January. Day Degrees. | | | | Differences from Observed Values. Day Degrees. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Observed. | Calculated with Coefficient *p*. | Θ – 42°. | $\frac{1}{2}(T + t) - 42°$. | Observed. | Calculated with Coefficient *p*. | Θ – 42°. | $\frac{1}{2}(T + t) - 42°$. | Calculated with Coefficient *p*. | Θ – 42°. | $\frac{1}{2}(T + t) - 42°$. |
| January | 1 to 28 - | — | — | — | — | — | — | — | — | — | — | — |
| February | „ 25 - | 36 | 26 | 11 | 11 | 36 | 26 | 11 | 11 | –10 | –25 | –25 |
| March | „ 25 - | 99 | 109 | 70 | 81 | 135 | 135 | 81 | 92 | 0 | –54 | –43 |
| April | „ 22 - | 102 | 111 | 70 | 71 | 237 | 246 | 151 | 163 | + 9 | –86 | –74 |
| May | „ 20 - | 252 | 238 | 244 | 241 | 489 | 484 | 395 | 404 | – 5 | –94 | –85 |
| June | „ 17 - | 450 | 442 | 449 | 458 | 939 | 926 | 844 | 862 | –13 | –95 | –77 |
| July | „ 15 - | 601 | 582 | 545 | 600 | 1,540 | 1,508 | 1,389 | 1,462 | –32 | –151 | –78 |
| August | „ 12 - | 582 | 571 | 581 | 587 | 2,122 | 2,079 | 1,970 | 2,049 | –43 | –152 | –73 |
| September | „ 9 - | 411 | 409 | 412 | 419 | 2,533 | 2,488 | 2,382 | 2,468 | –45 | –151 | –65 |
| „ | „ 30 - | 283 | 283 | 281 | 290 | 2,816 | 2,771 | 2,663 | 2,758 | –45 | –153 | –58 |

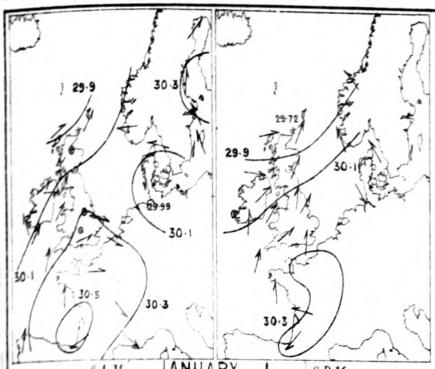
## TABLE XI.

VALUES of E, reckoned above 42° F., obtained from the TRUE MEAN TEMPERATURE Θ, and the MEAN MAXIMUM and MINIMUM, $\frac{1}{2}(T \times t)$, compared with the OBSERVED VALUES from the KEW OBSERVATIONS for 1873, and the CALCULATED VALUES shown in TABLE IX.

| MONTHS. | Values of E for separate Periods. Day Degrees. | | | | | Progressive Values of E. Day Degrees. | | | | | Differences from Observed Values. Day Degrees. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of Days. | Actually observed. | Calculated with Coefficient *p*. | Θ – 42°. | $\frac{1}{2}(T + t) - 42°$. | Number of Days. | Actually observed. | Calculated with Coefficient *p*. | Θ – 42°. | $\frac{1}{2}(T + t) - 42°$. | Calculated with Coefficient *p*. | Θ – 42°. | $\frac{1}{2}(T + t) - 42°$. |
| January 1 to 30 - | 30 | 95 | 105 | 93 | 90 | 30 | 95 | 105 | 93 | 90 | +10 | – 2 | – 5 |
| to March 1 - - | 30 | 10 | 3 | — | — | 60 | 105 | 108 | 93 | 90 | + 3 | – 12 | –15 |
| „ March 31 - - | 30 | 75 | 103 | 47 | 73 | 90 | 180 | 211 | 140 | 163 | +31 | – 40 | –17 |
| „ April 30 - - | 30 | 156 | 181 | 132 | 168 | 120 | 336 | 392 | 272 | 331 | +56 | – 64 | – 5 |
| „ May 30 - - | 30 | 273 | 283 | 273 | 295 | 150 | 609 | 675 | 545 | 626 | +66 | – 64 | +17 |
| „ June 29 - - | 30 | 514 | 520 | 514 | 539 | 180 | 1,123 | 1,195 | 1,059 | 1,165 | +72 | – 64 | +42 |
| „ July 29 - - | 30 | 648 | 628 | 642 | 648 | 210 | 1,771 | 1,823 | 1,701 | 1,813 | +52 | – 70 | +42 |
| „ September 2 - | 35 | 727 | 730 | 718 | 745 | 245 | 2,498 | 2,553 | 2,419 | 2,558 | +55 | – 79 | +60 |
| „ October 2 - | 30 | 368 | 393 | 369 | 400 | 275 | 2,866 | 2,946 | 2,788 | 2,958 | +80 | – 78 | +92 |
| „ November 1 - | 30 | 205 | 212 | 175 | 172 | 305 | 3,071 | 3,158 | 2,963 | 3,130 | +87 | –108 | +59 |
| „ December 1 - | 30 | 110 | 103 | 90 | 84 | 335 | 3,181 | 3,266 | 3,053 | 3,214 | +80 | –128 | +33 |
| „ December 31 - | 30 | 83 | 59 | 55 | 47 | 365 | 3,264 | 3,320 | 3,108 | 3,261 | +56 | –156 | – 3 |

# JANUARY, 1878.

Chart Plate. 1.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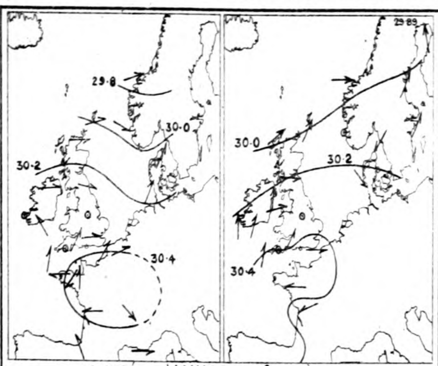
30·1
29·99
30·1
30·5
30·3
29·72
29·9
30·1
30·3

8 A.M. JANUARY 1 6 P.M.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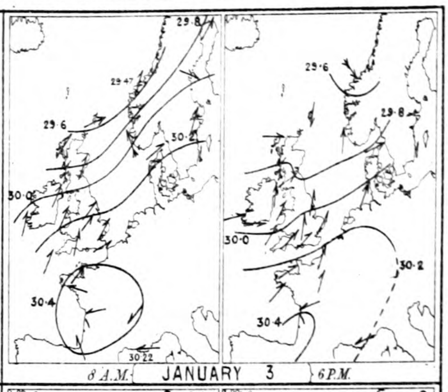
30·2
30·4

8 A.M. JANUARY 2 6 P.M.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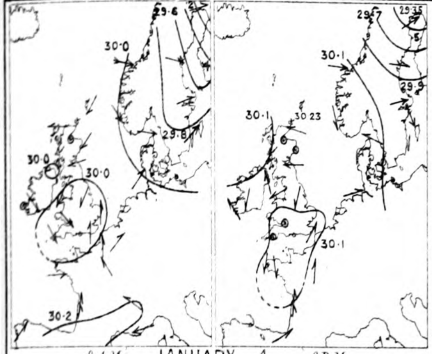
30·0
30·2
30·4

8 A.M. JANUARY 3 6 P.M.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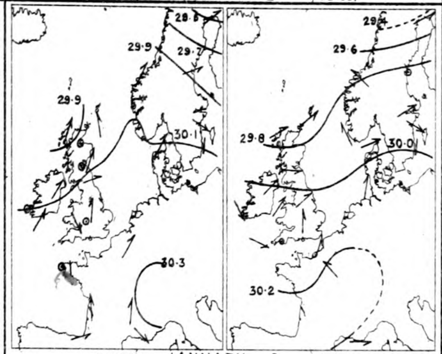
30·1
30·23
29·9
30·1

8 A.M. JANUARY 4 6 P.M.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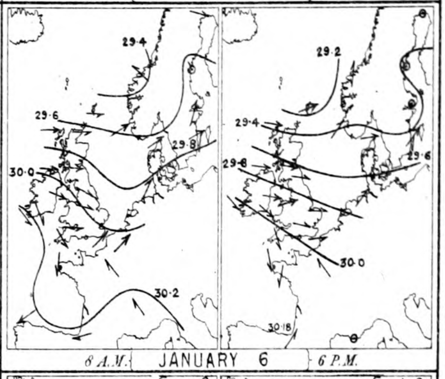
30·3
29·6
29·8
30·0
30·2

8 A.M. JANUARY 5 6 P.M.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29·4
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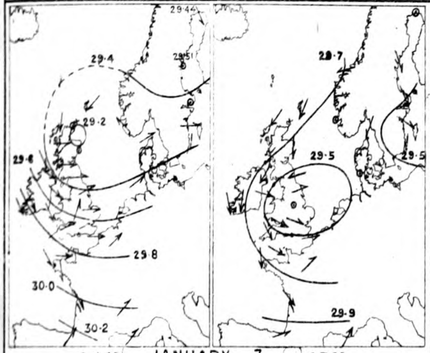
29·8
30·0
30·18

8 A.M. JANUARY 6 6 P.M.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29·51
29·2
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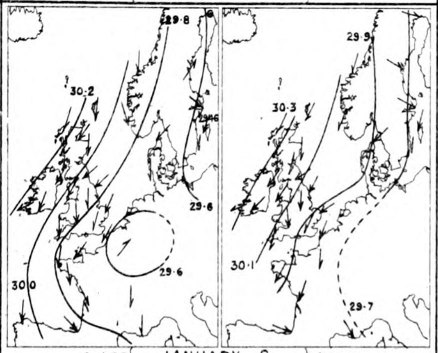
30·2
29·7
29·5
29·5
29·9

8 A.M. JANUARY 7 6 P.M.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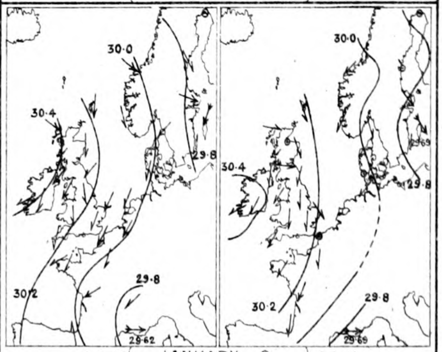
29·9
30·3
30·1
29·7

8 A.M. JANUARY 8 6 P.M.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29·8
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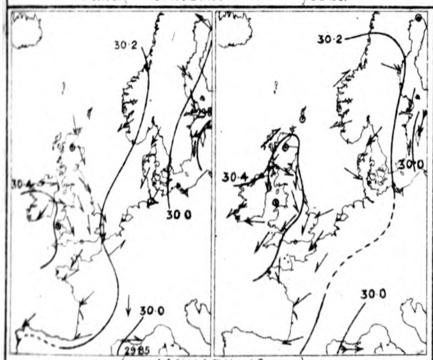
30·2
29·8
29·69

8 A.M. JANUARY 9 6 P.M.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30·4
30·0
30·0

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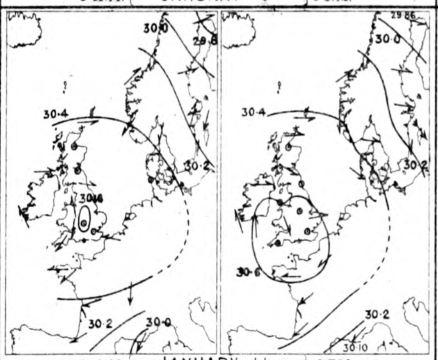
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29·8
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30·2
30·0
29·85
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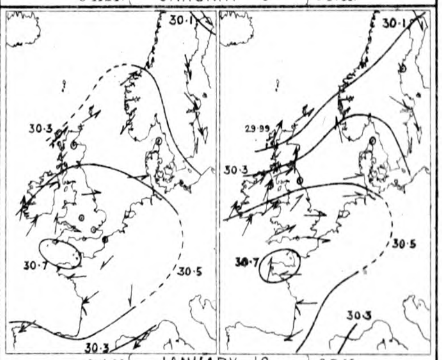
30·6
30·2
30·10

8 A.M. JANUARY 11 6 P.M.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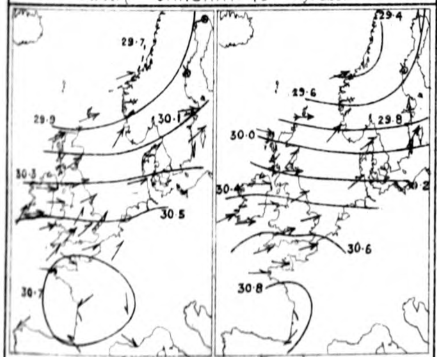
30·7
30·5
30·3
30·1
29·99
30·3
30·5
30·7
30·3

8 A.M. JANUARY 12 6 P.M.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30·7
29·4
29·6
29·8
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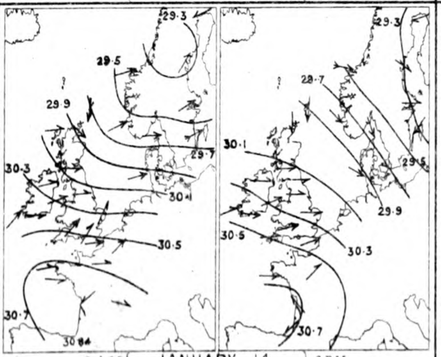
30·2
30·4
30·6
30·8

8 A.M. JANUARY 13 6 P.M.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29·9
29·7
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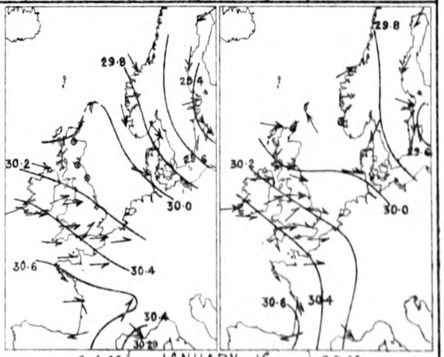
30·5
30·7
30·64
29·3
28·7
30·1
29·5
29·9
30·5
30·3
30·7

8 A.M. JANUARY 14 6 P.M.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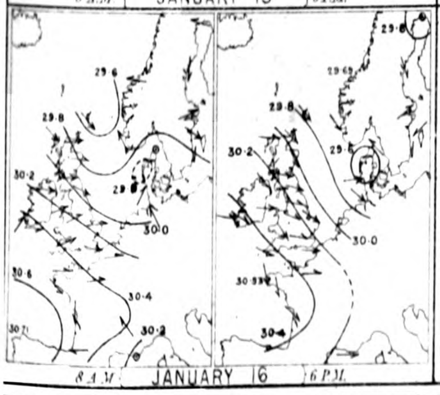
29·4
30·2
29·6
30·0
30·6
30·4
30·4
30·20
29·8
29·6
30·2
30·0
30·6
30·4

8 A.M. JANUARY 15 6 P.M.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29·8
30·2
29·8
30·0
30·6
30·4
30·71
30·2
29·8
29·69
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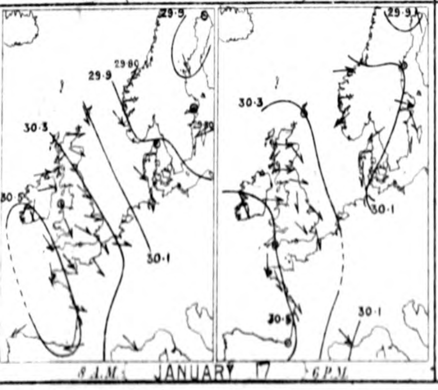
30·2
29·8
30·0
30·33
30·4

8 A.M. JANUARY 16 6 P.M.


29·5
29·80
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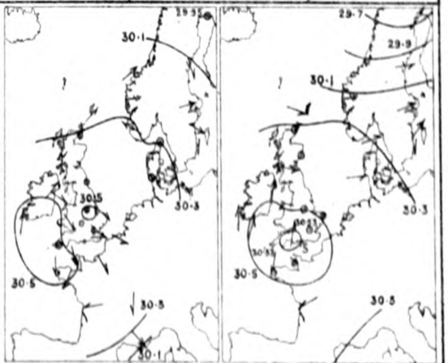
30·5
29·9
30·1
29·93
30·3
30·1
30·5
30·1

8 A.M. JANUARY 17 6 P.M.

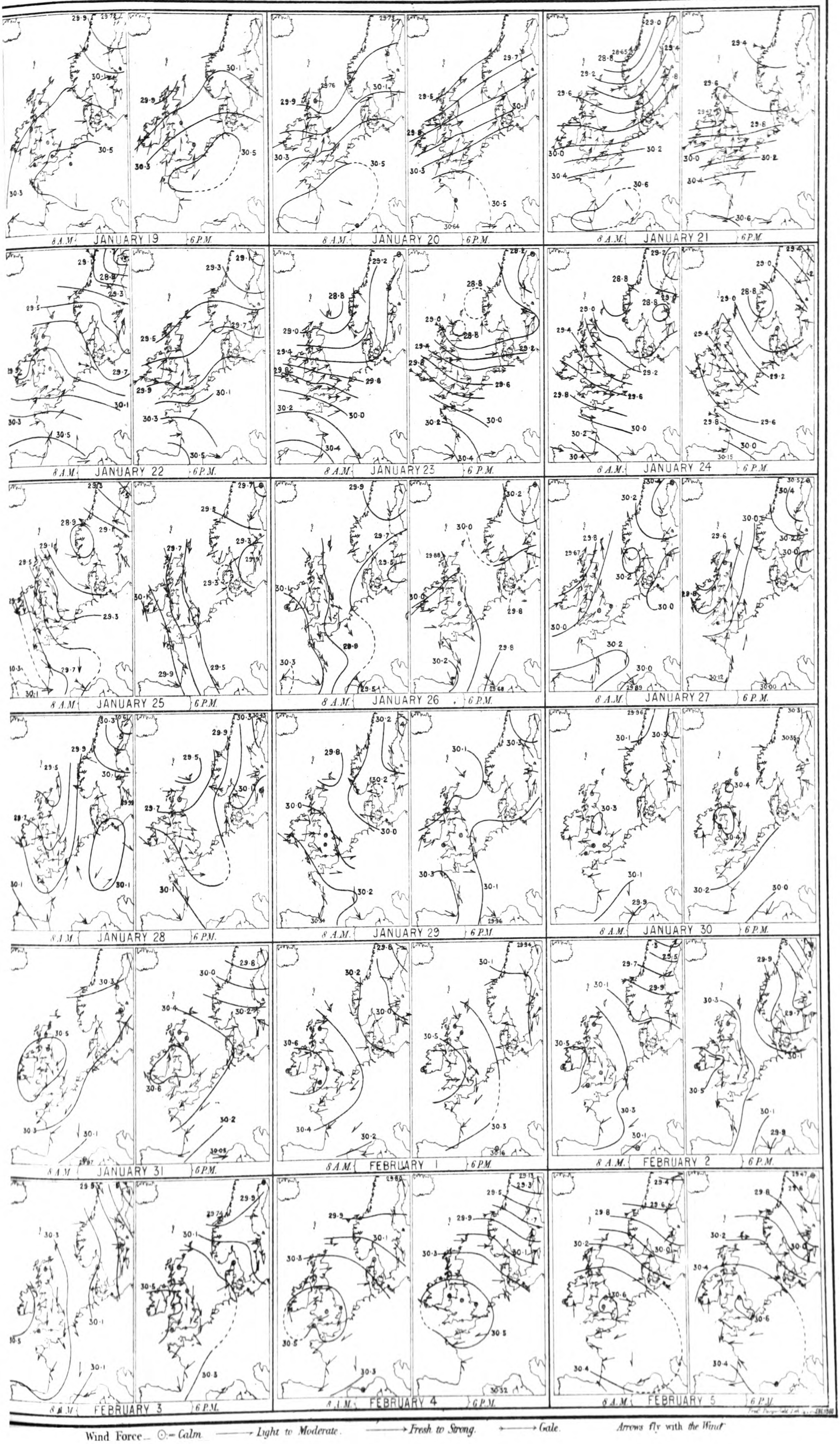

29·95
30·1
30·15
30·3
30·5
30·3
30·1
29·7
29·9
30·1
30·3
30·5
30·3

8 A.M. JANUARY 18 6 P.M.

Wind Force — ⊙ – *Calm* ——→ *Light to Moderate.* ——→ *Fresh to Strong.* ——→ *Gale.* *Arrows fly with the Wind.*

# JANUARY & FEBRUARY, 1878.

Chart Plate 2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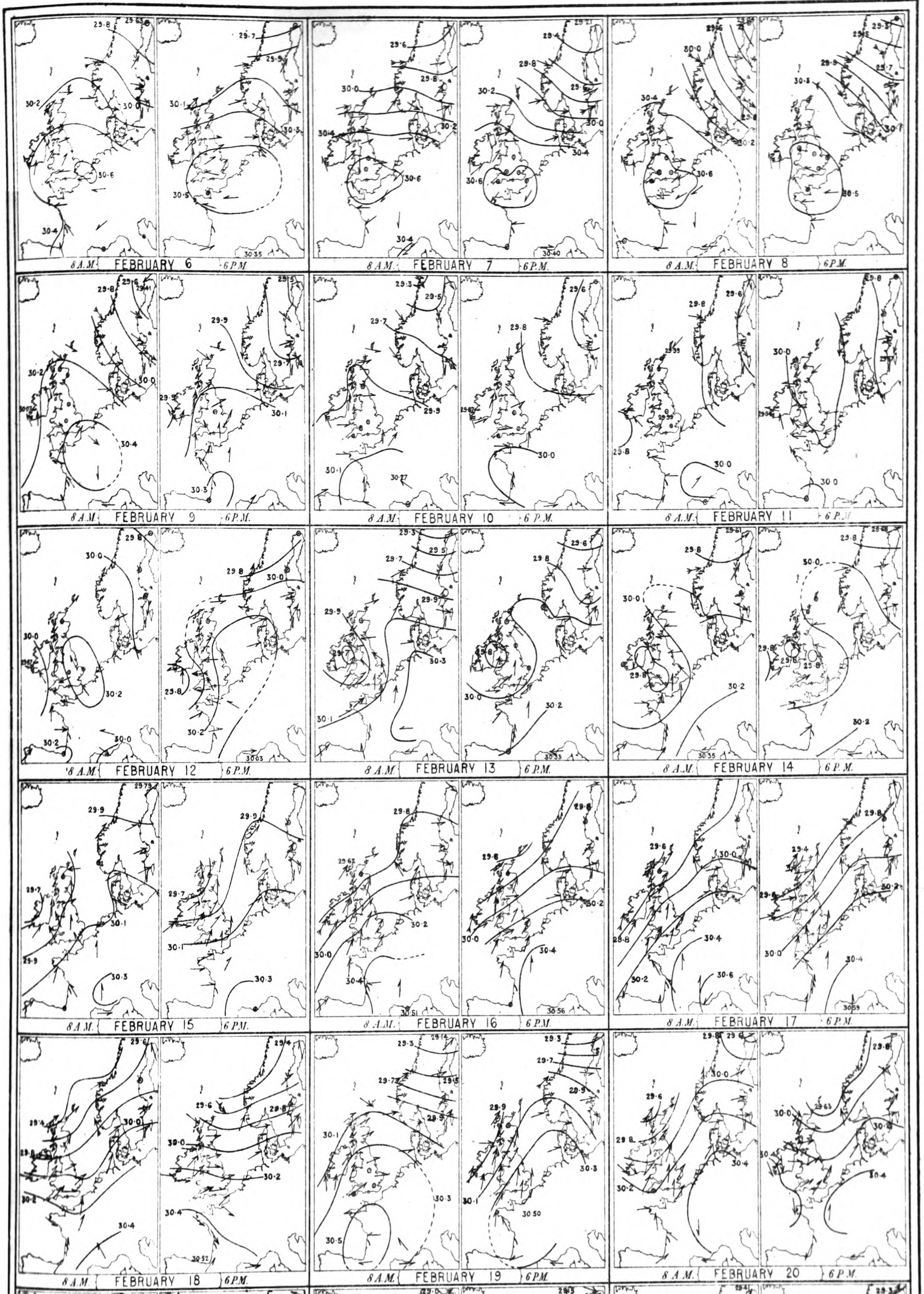
8 A.M. JANUARY 20 6 P.M.
8 A.M. JANUARY 21 6 P.M.
8 A.M. JANUARY 22 6 P.M.
8 A.M. JANUARY 23 6 P.M.
8 A.M. JANUARY 24 6 P.M.
8 A.M. JANUARY 25 6 P.M.
8 A.M. JANUARY 26 6 P.M.
8 A.M. JANUARY 27 6 P.M.
8 A.M. JANUARY 28 6 P.M.
8 A.M. JANUARY 29 6 P.M.
8 A.M. JANUARY 30 6 P.M.
8 A.M. JANUARY 31 6 P.M.
8 A.M. FEBRUARY 1 6 P.M.
8 A.M. FEBRUARY 2 6 P.M.
8 A.M. FEBRUARY 3 6 P.M.
8 A.M. FEBRUARY 4 6 P.M.
8 A.M. FEBRUARY 5 6 P.M.

Wind Force — ⊙ — Calm. ——→ Light to Moderate. ——→ Fresh to Strong. ——→ Gale. Arrows fly with the Wind.

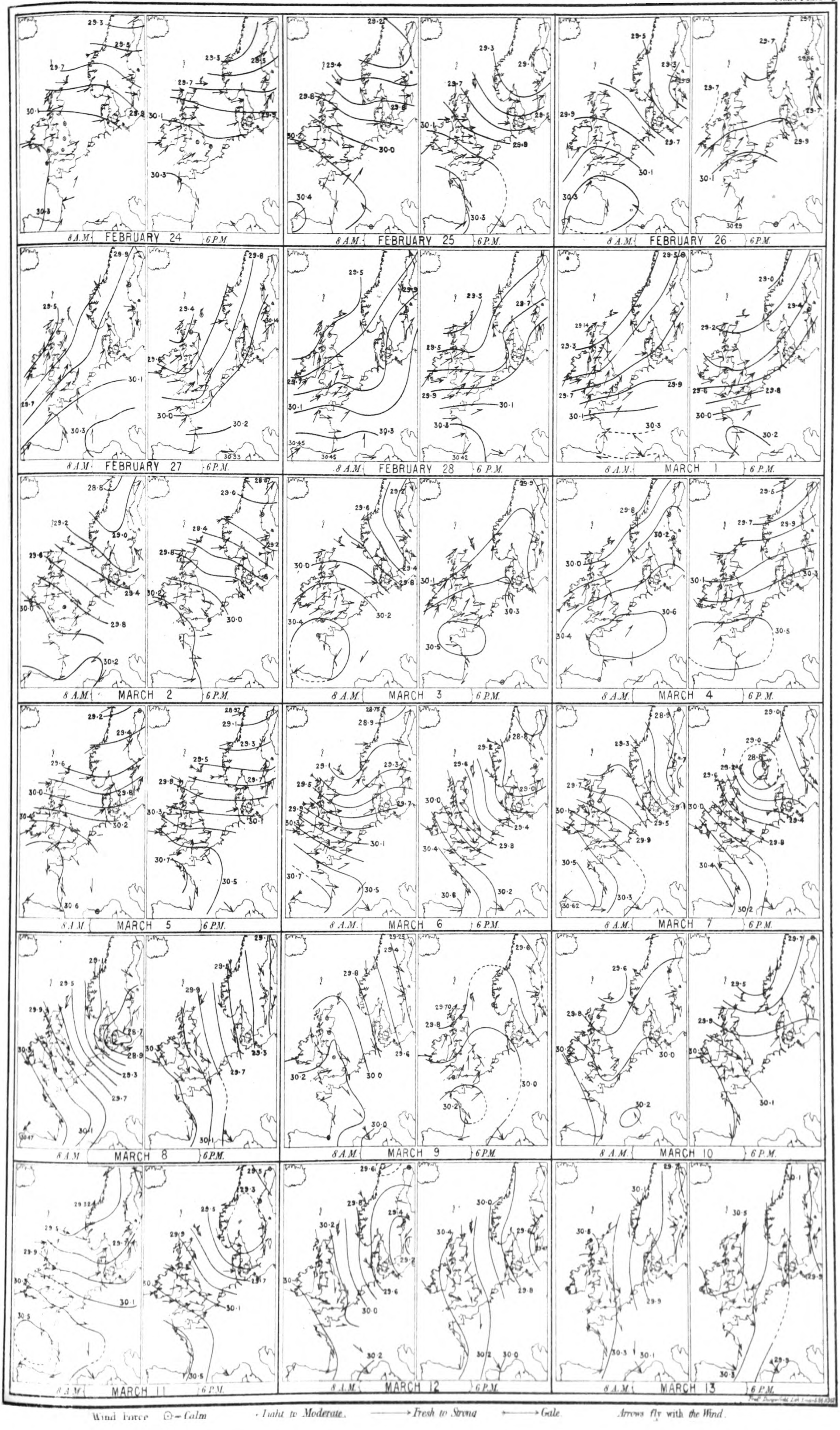
# FEBRUARY, 1878.


8 A.M. FEBRUARY 6 6 P.M.
8 A.M. FEBRUARY 7 6 P.M.
8 A.M. FEBRUARY 8 6 P.M.
8 A.M. FEBRUARY 9 6 P.M.
8 A.M. FEBRUARY 10 6 P.M.
8 A.M. FEBRUARY 11 6 P.M.
8 A.M. FEBRUARY 12 6 P.M.
8 A.M. FEBRUARY 13 6 P.M.
8 A.M. FEBRUARY 14 6 P.M.
8 A.M. FEBRUARY 15 6 P.M.
8 A.M. FEBRUARY 16 6 P.M.
8 A.M. FEBRUARY 17 6 P.M.
8 A.M. FEBRUARY 18 6 P.M.
8 A.M. FEBRUARY 19 6 P.M.
8 A.M. FEBRUARY 20 6 P.M.
8 A.M. FEBRUARY 21 6 P.M.
8 A.M. FEBRUARY 22 6 P.M.
8 A.M. FEBRUARY 23 6 P.M.

Wind Force _ ⊙ – Calm ——→ *Light to Moderate.* ——→ *Fresh to Strong.* ——→ *Gale.* *Arrows fly with the Wind.*

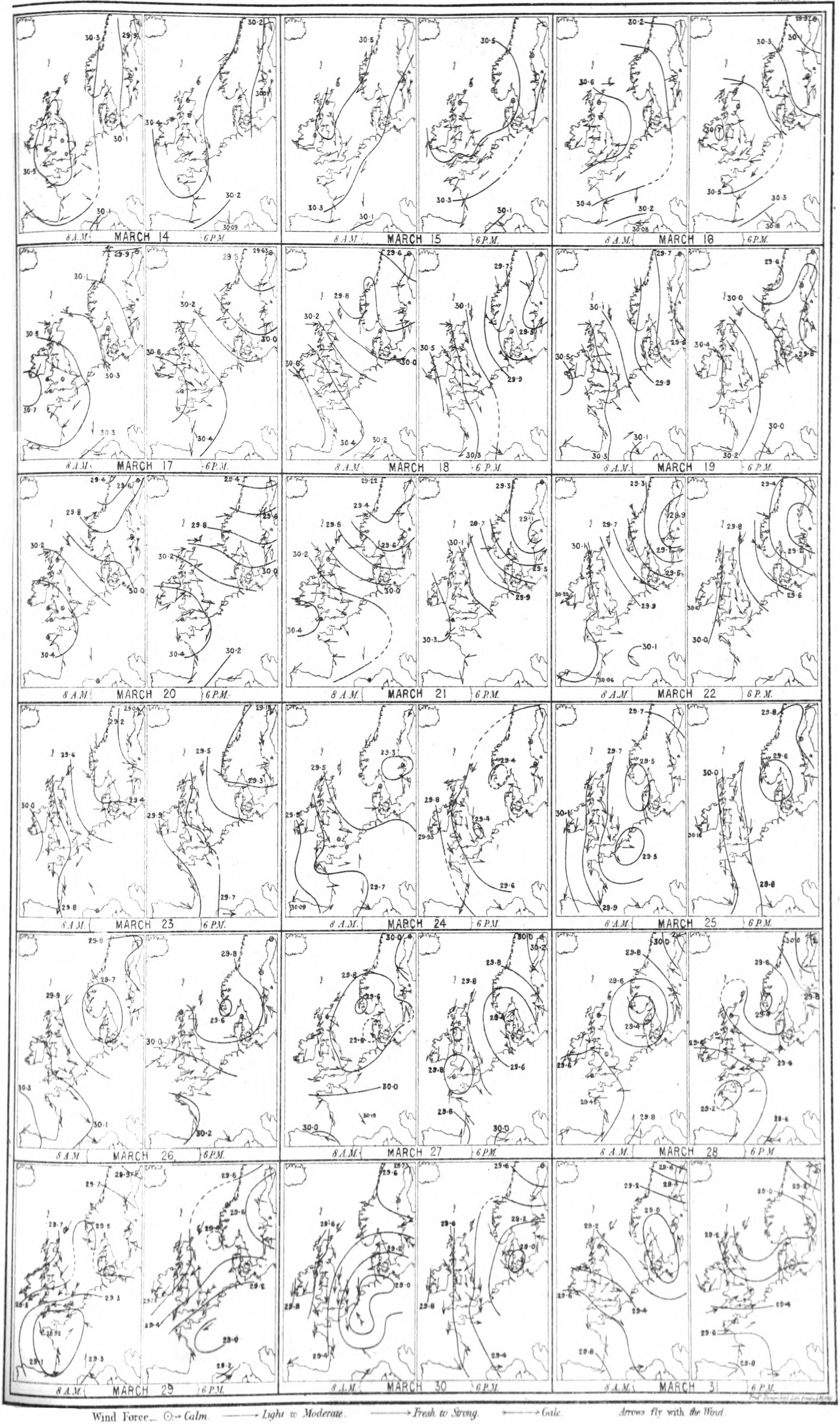
# FEBRUARY & MARCH, 1878.

Chart Plate 4


8 A.M. FEBRUARY 24 6 P.M.
29·3
29·5
29·7
30·1
29·9
30·3
29·3
29·5
29·7
30·1
29·3
30·3
8 A.M. FEBRUARY 25 6 P.M.
29·2
29·4
29·8
29·8
30·2
30·0
30·4
29·3
29·1
29·7
30·1
28·5
29·8
30·3
8 A.M. FEBRUARY 26 6 P.M.
29·5
29·3
29·9
29·9
29·7
30·1
30·3
29·7
29·56
29·7
29·7
29·9
30·1
30·29
8 A.M. FEBRUARY 27 6 P.M.
29·9
29·5
29·7
30·1
30·3
29·8
29·4
29·6
30·14
30·0
30·2
30·33
8 A.M. FEBRUARY 28 6 P.M.
29·5
29·9
29·7
30·1
30·3
30·45
30·45
29·3
29·7
29·5
29·9
30·1
30·3
30·42
8 A.M. MARCH 1 6 P.M.
29·5
29·14
29·3
29·7
29·9
30·1
30·3
29·0
29·4
29·2
29·6
29·8
30·0
30·2
8 A.M. MARCH 2 6 P.M.
28·8
29·2
29·0
29·6
29·4
30·0
29·8
30·2
28·87
29·0
29·4
29·6
29·2
30·2
30·0
8 A.M. MARCH 3 6 P.M.
29·6
29·2
29·5
30·0
29·4
29·8
30·2
30·4
29·9
30·1
30·3
30·5
8 A.M. MARCH 4 6 P.M.
29·8
30·2
30·0
30·6
30·4
29·5
29·7
29·9
30·1
30·3
30·5
8 A.M. MARCH 5 6 P.M.
29·2
29·4
29·6
30·0
29·8
30·4
30·2
30·6
28·97
29·1
29·3
29·5
29·9
29·7
30·3
30·1
30·7
30·5
8 A.M. MARCH 6 6 P.M.
28·75
28·9
29·1
29·3
29·5
29·7
29·9
30·1
30·3
30·7
30·5
28·8
29·2
29·6
29·0
30·0
29·4
29·8
30·4
30·6
30·2
8 A.M. MARCH 7 6 P.M.
28·9
29·3
29·7
29·1
30·1
29·5
29·9
30·5
30·3
30·62
29·0
29·0
28·8
29·6
29·2
30·0
29·4
29·8
30·4
30·2
8 A.M. MARCH 8 6 P.M.
29·1
29·5
29·9
28·7
30·3
28·9
29·3
29·7
30·1
30·47
29·
29·5
29·9
30·3
29·3
29·7
30·1
8 A.M. MARCH 9 6 P.M.
29·25
29·4
29·8
29·6
30·2
30·0
30·0
29·6
29·70
29·8
30·0
30·2
8 A.M. MARCH 10 6 P.M.
29·6
29·8
30·2
30·0
30·2
29·7
29·5
29·9
30·1
8 A.M. MARCH 11 6 P.M.
29·5
29·32
29·6
29·9
29·7
30·1
30·3
30·5
29·3
29·5
29·9
29·7
30·
30·1
30·5
8 A.M. MARCH 12 6 P.M.
29·6
29·8
30·2
29·4
29·2
30·4
29·6
30·0
30·2
30·0
30·4
29·6
29·8
30·2
30·0
8 A.M. MARCH 13 6 P.M.
29·
30·1
30·8
29·9
30·3
30·1
30·1
30·5
30·3
29·9
Wind Force ⊙ = Calm
Light to Moderate.
Fresh to Strong
Gale.
Arrows fly with the Wind.

# MARCH, 1878.

Chart Plate. 5.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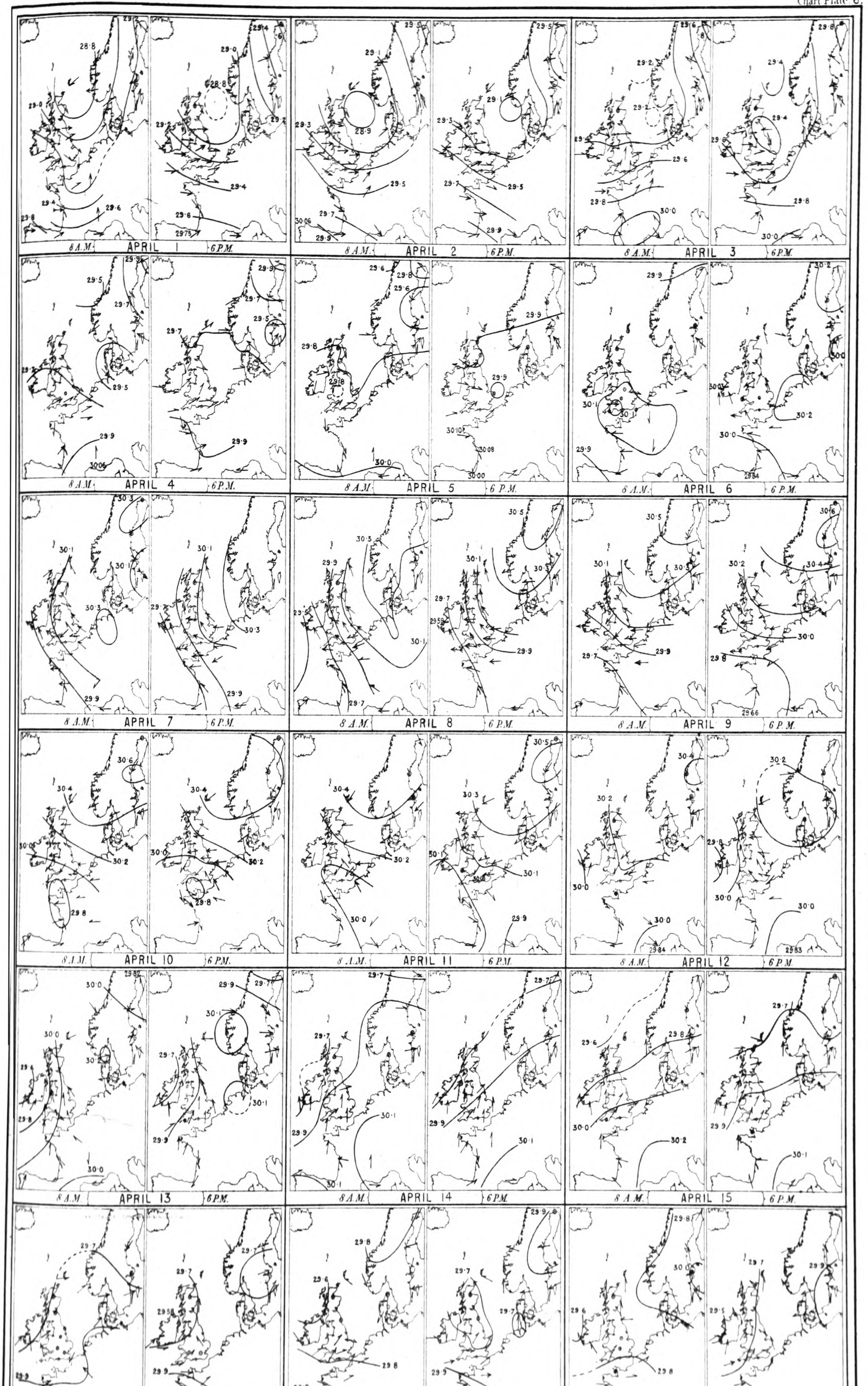
8 A.M. MARCH 15 6 P.M.
8 A.M. MARCH 16 6 P.M.
8 A.M. MARCH 17 6 P.M.
8 A.M. MARCH 18 6 P.M.
8 A.M. MARCH 19 6 P.M.
8 A.M. MARCH 20 6 P.M.
8 A.M. MARCH 21 6 P.M.
8 A.M. MARCH 22 6 P.M.
8 A.M. MARCH 23 6 P.M.
8 A.M. MARCH 24 6 P.M.
8 A.M. MARCH 25 6 P.M.
8 A.M. MARCH 26 6 P.M.
8 A.M. MARCH 27 6 P.M.
8 A.M. MARCH 28 6 P.M.
8 A.M. MARCH 29 6 P.M.
8 A.M. MARCH 30 6 P.M.
8 A.M. MARCH 31 6 P.M.

Wind Force— ⊙ Calm. → Light to Moderate. → Fresh to Strong. → Gale. Arrows fly with the Wind.

# APRIL, 1878.

Chart Plate 6.

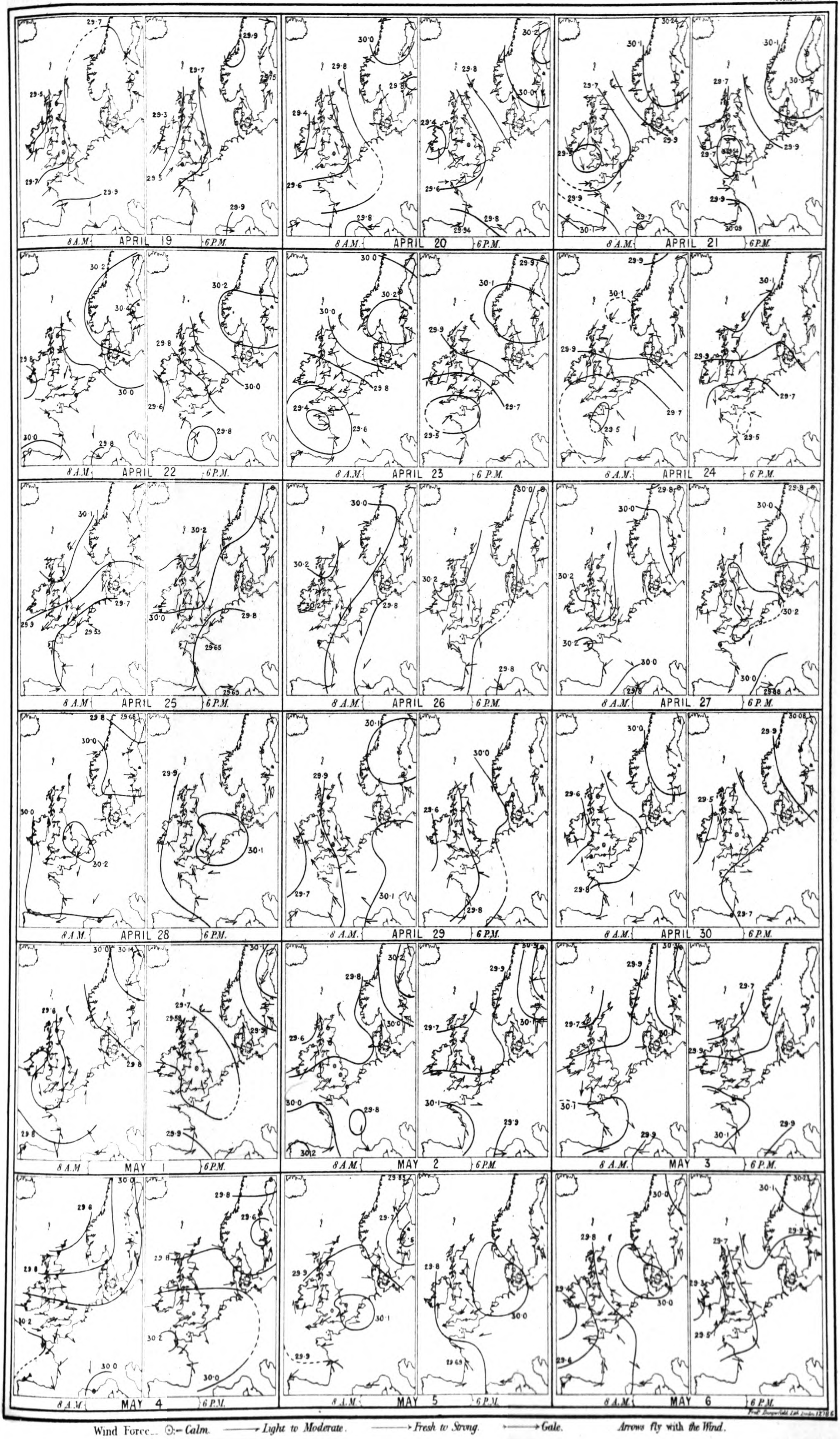

8 A.M. APRIL 1 6 P.M.
8 A.M. APRIL 2 6 P.M.
8 A.M. APRIL 3 6 P.M.
8 A.M. APRIL 4 6 P.M.
8 A.M. APRIL 5 6 P.M.
8 A.M. APRIL 6 6 P.M.
8 A.M. APRIL 7 6 P.M.
8 A.M. APRIL 8 6 P.M.
8 A.M. APRIL 9 6 P.M.
8 A.M. APRIL 10 6 P.M.
8 A.M. APRIL 11 6 P.M.
8 A.M. APRIL 12 6 P.M.
8 A.M. APRIL 13 6 P.M.
8 A.M. APRIL 14 6 P.M.
8 A.M. APRIL 15 6 P.M.
8 A.M. APRIL 16 6 P.M.
8 A.M. APRIL 17 6 P.M.
8 A.M. APRIL 18 6 P.M.

Fredk Dangerfield, Lith. London

Wind Force.. ⊙:- *Calm* ⟶ *Light to Moderate.* ⟶ *Fresh to Strong* ⟶ *Gale* *Arrows fly with the Wind*

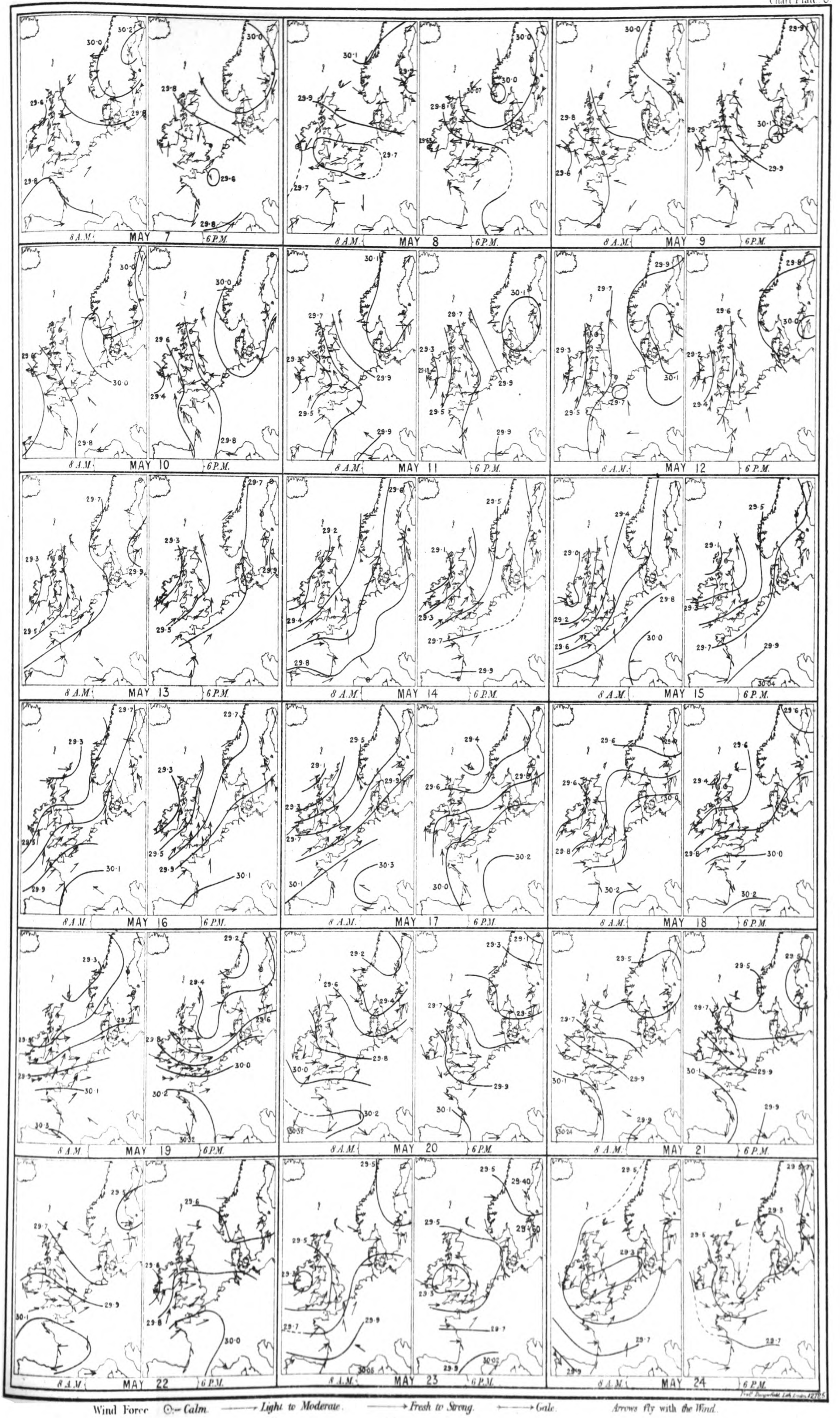
# APRIL & MAY, 1878.

Chart Plate. 7.


8 A.M. APRIL 19 6 P.M.
8 A.M. APRIL 20 6 P.M.
8 A.M. APRIL 21 6 P.M.
8 A.M. APRIL 22 6 P.M.
8 A.M. APRIL 23 6 P.M.
8 A.M. APRIL 24 6 P.M.
8 A.M. APRIL 25 6 P.M.
8 A.M. APRIL 26 6 P.M.
8 A.M. APRIL 27 6 P.M.
8 A.M. APRIL 28 6 P.M.
8 A.M. APRIL 29 6 P.M.
8 A.M. APRIL 30 6 P.M.
8 A.M. MAY 1 6 P.M.
8 A.M. MAY 2 6 P.M.
8 A.M. MAY 3 6 P.M.
8 A.M. MAY 4 6 P.M.
8 A.M. MAY 5 6 P.M.
8 A.M. MAY 6 6 P.M.
Fredk Bungerfield Lith. London

Wind Force ⊙ – *Calm.* ⟶ *Light to Moderate.* ⟶ *Fresh to Strong.* ⟶ *Gale.* *Arrows fly with the Wind.*

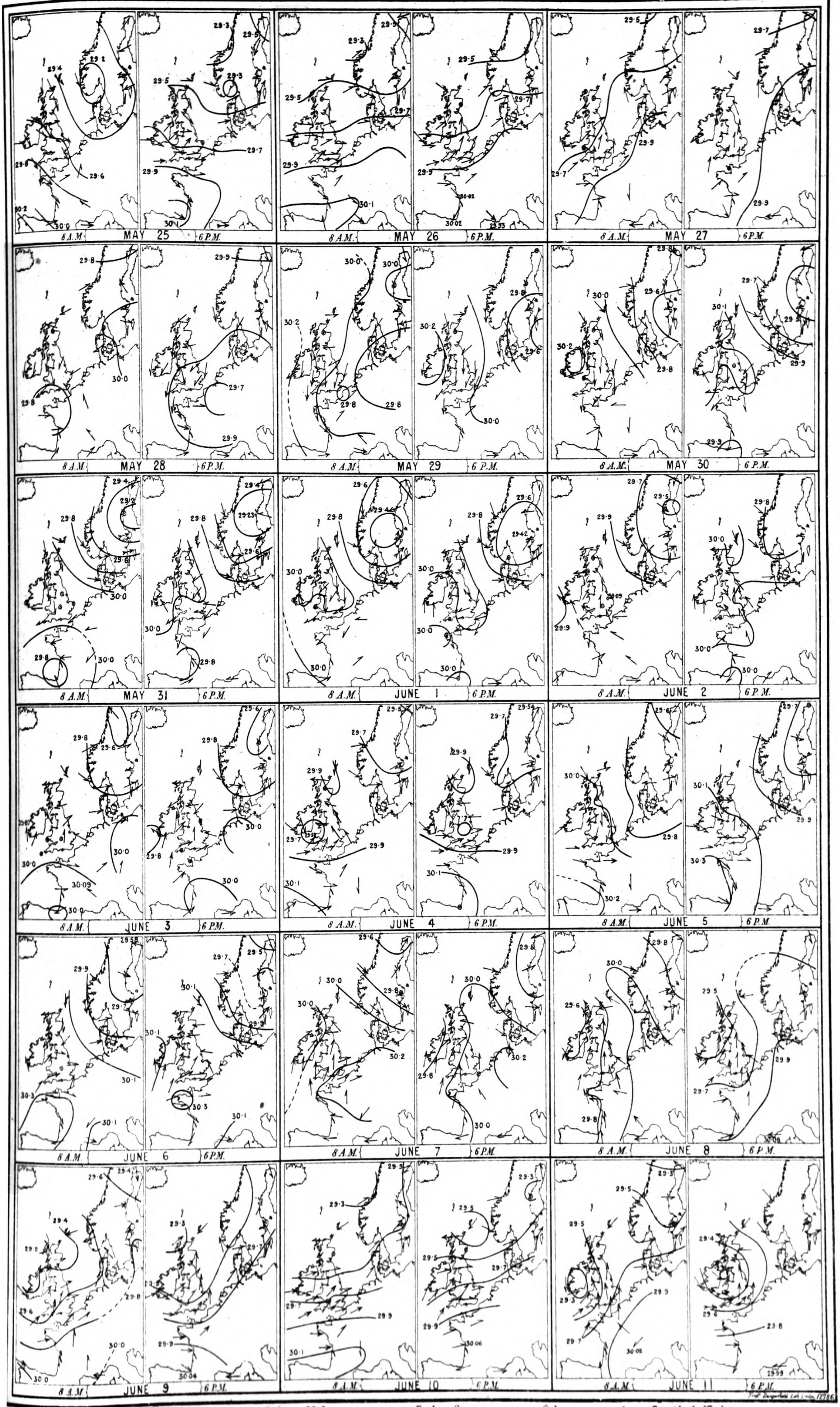
# MAY, 1878.


8 A.M. MAY 7 6 P.M.
8 A.M. MAY 8 6 P.M.
8 A.M. MAY 9 6 P.M.
8 A.M. MAY 10 6 P.M.
8 A.M. MAY 11 6 P.M.
8 A.M. MAY 12 6 P.M.
8 A.M. MAY 13 6 P.M.
8 A.M. MAY 14 6 P.M.
8 A.M. MAY 15 6 P.M.
8 A.M. MAY 16 6 P.M.
8 A.M. MAY 17 6 P.M.
8 A.M. MAY 18 6 P.M.
8 A.M. MAY 19 6 P.M.
8 A.M. MAY 20 6 P.M.
8 A.M. MAY 21 6 P.M.
8 A.M. MAY 22 6 P.M.
8 A.M. MAY 23 6 P.M.
8 A.M. MAY 24 6 P.M.

Wind Force ⊙ Calm → *Light to Moderate* → *Fresh to Strong* → *Gale.* *Arrows fly with the Wind.*

# MAY & JUNE, 1878.

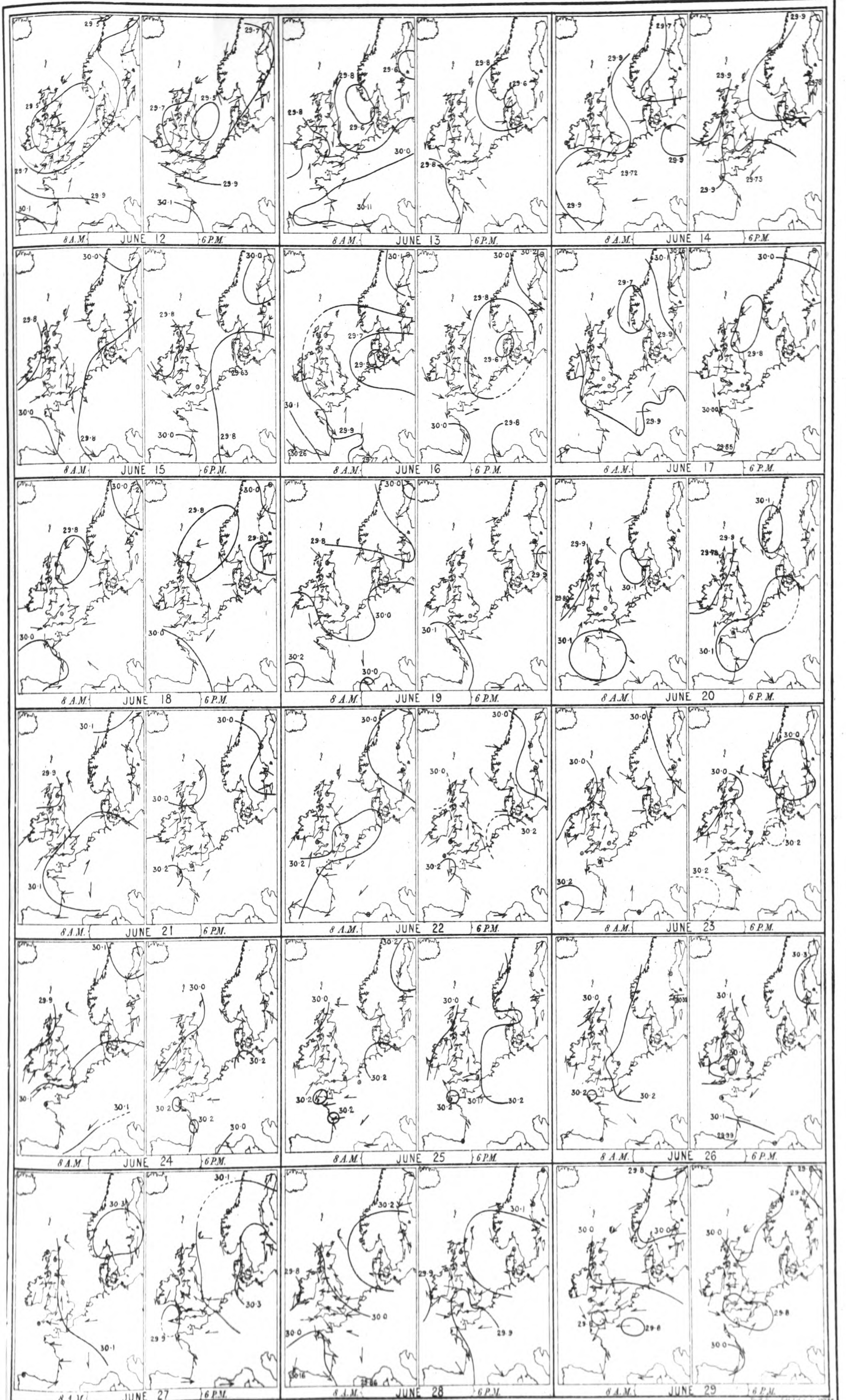
Chart Plate. 9.


8 A.M. MAY 25 6 P.M.
8 A.M. MAY 26 6 P.M.
8 A.M. MAY 27 6 P.M.
8 A.M. MAY 28 6 P.M.
8 A.M. MAY 29 6 P.M.
8 A.M. MAY 30 6 P.M.
8 A.M. MAY 31 6 P.M.
8 A.M. JUNE 1 6 P.M.
8 A.M. JUNE 2 6 P.M.
8 A.M. JUNE 3 6 P.M.
8 A.M. JUNE 4 6 P.M.
8 A.M. JUNE 5 6 P.M.
8 A.M. JUNE 6 6 P.M.
8 A.M. JUNE 7 6 P.M.
8 A.M. JUNE 8 6 P.M.
8 A.M. JUNE 9 6 P.M.
8 A.M. JUNE 10 6 P.M.
8 A.M. JUNE 11 6 P.M.

Wind Force... ⊙ - *Calm* ——→ *Light to Moderate.* ——→ *Fresh to Strong.* ——→ *Gale.* *Arrows fly with the Wind.*

Chart Plate. 10.

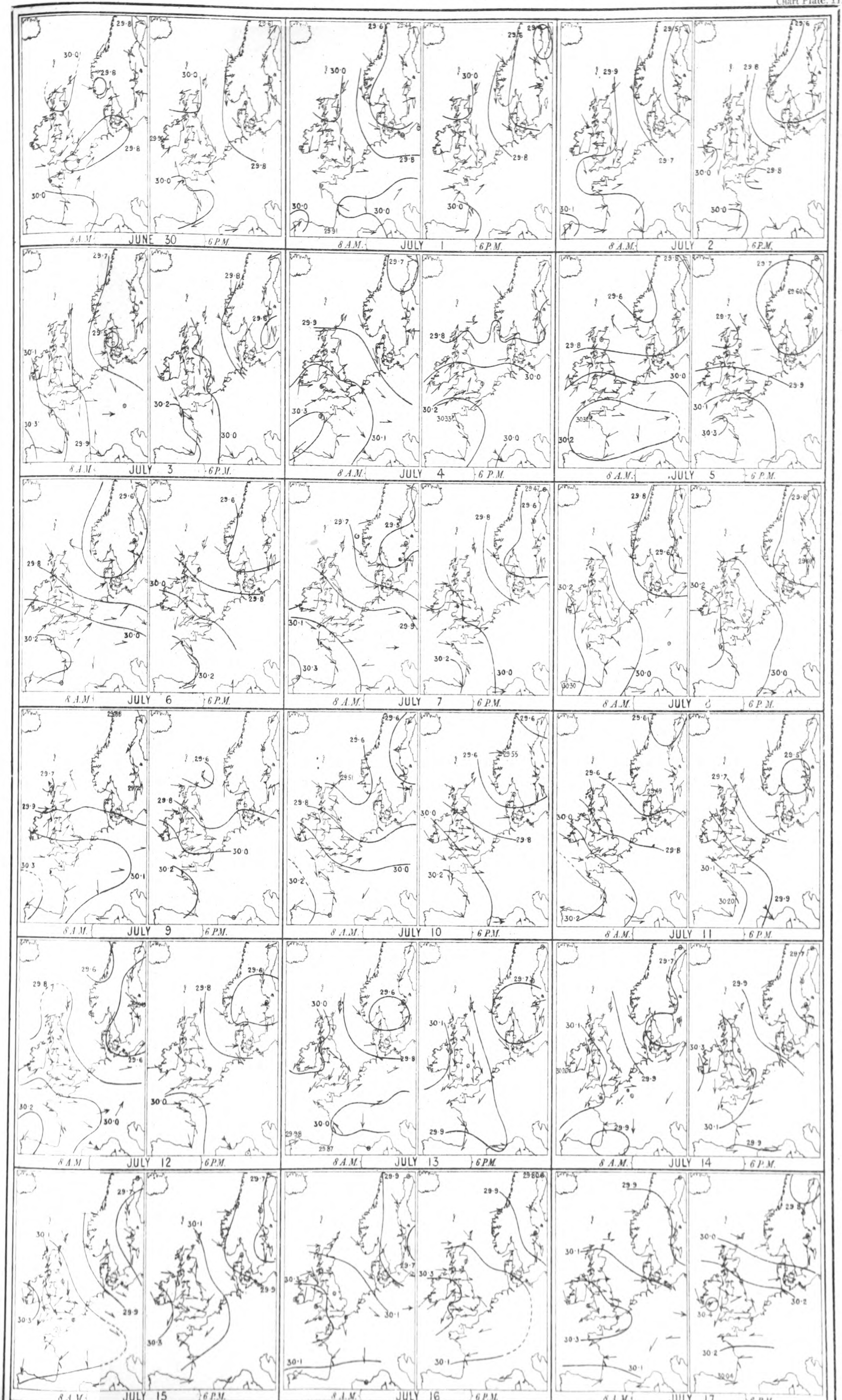
# JUNE, 1878.


8 A.M. JUNE 12 6 P.M.
8 A.M. JUNE 13 6 P.M.
8 A.M. JUNE 14 6 P.M.
8 A.M. JUNE 15 6 P.M.
8 A.M. JUNE 16 6 P.M.
8 A.M. JUNE 17 6 P.M.
8 A.M. JUNE 18 6 P.M.
8 A.M. JUNE 19 6 P.M.
8 A.M. JUNE 20 6 P.M.
8 A.M. JUNE 21 6 P.M.
8 A.M. JUNE 22 6 P.M.
8 A.M. JUNE 23 6 P.M.
8 A.M. JUNE 24 6 P.M.
8 A.M. JUNE 25 6 P.M.
8 A.M. JUNE 26 6 P.M.
8 A.M. JUNE 27 6 P.M.
8 A.M. JUNE 28 6 P.M.
8 A.M. JUNE 29 6 P.M.

Wind Force.. ⊙ - Calm. ⟶ Light to Moderate. ⟶ Fresh to Strong. ⟶ Gale. Arrows fly with the Wind.

# JUNE & JULY, 1878.

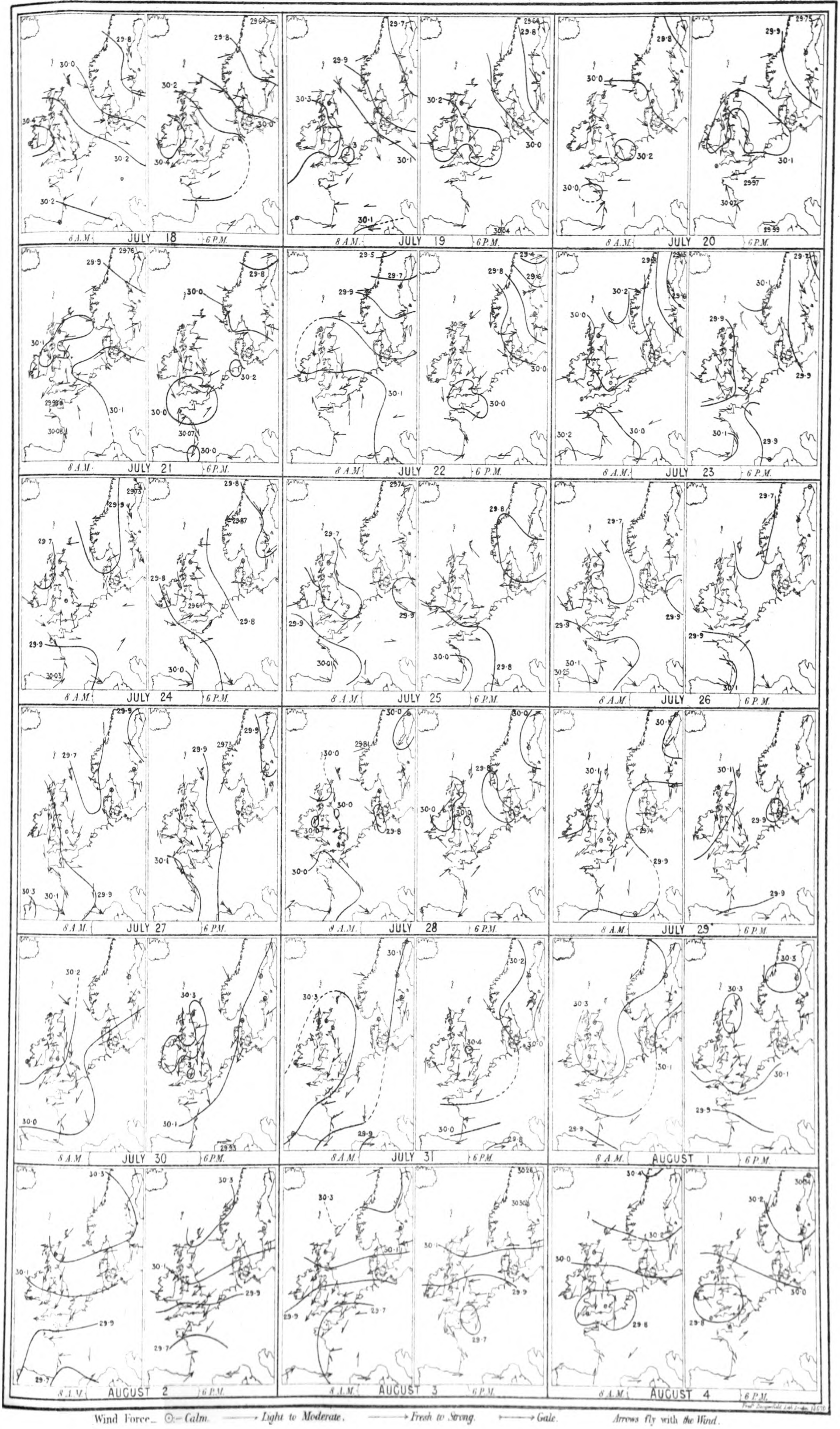
Chart Plate. 11.


8 A.M. JUNE 30 6 P.M.
8 A.M. JULY 1 6 P.M.
8 A.M. JULY 2 6 P.M.
8 A.M. JULY 3 6 P.M.
8 A.M. JULY 4 6 P.M.
8 A.M. JULY 5 6 P.M.
8 A.M. JULY 6 6 P.M.
8 A.M. JULY 7 6 P.M.
8 A.M. JULY 8 6 P.M.
8 A.M. JULY 9 6 P.M.
8 A.M. JULY 10 6 P.M.
8 A.M. JULY 11 6 P.M.
8 A.M. JULY 12 6 P.M.
8 A.M. JULY 13 6 P.M.
8 A.M. JULY 14 6 P.M.
8 A.M. JULY 15 6 P.M.
8 A.M. JULY 16 6 P.M.
8 A.M. JULY 17 6 P.M.

Wind Force. ⊙ = Calm. ——→ Light to Moderate. ——→ Fresh to Strong. ——→ Gale. Arrows fly with the Wind.

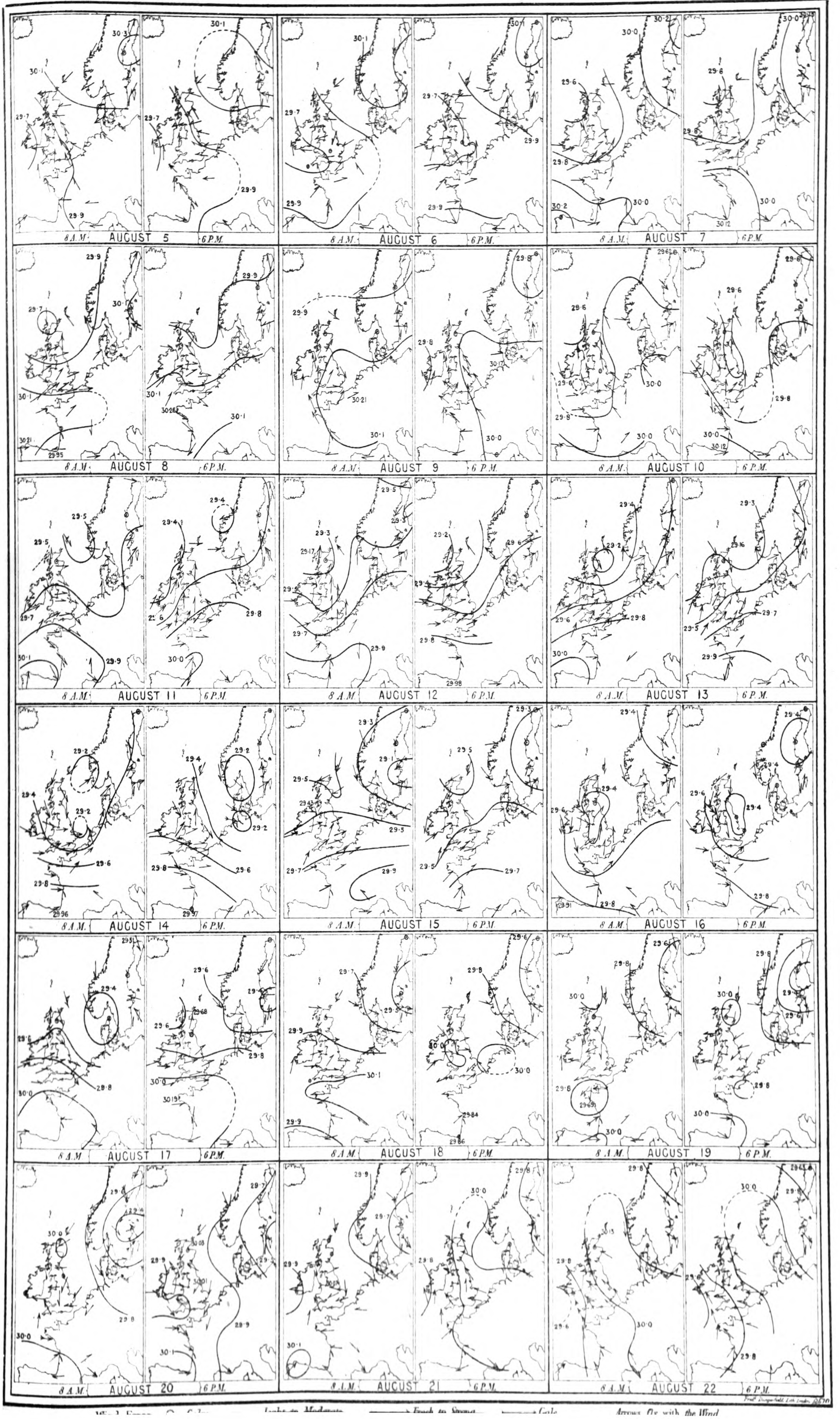
# JULY & AUGUST, 1878.

Chart Plate 12


8 A.M.
JULY 18
6 P.M.
8 A.M.
JULY 19
6 P.M.
8 A.M.
JULY 20
6 P.M.
8 A.M.
JULY 21
6 P.M.
8 A.M.
JULY 22
6 P.M.
8 A.M.
JULY 23
6 P.M.
8 A.M.
JULY 24
6 P.M.
8 A.M.
JULY 25
6 P.M.
8 A.M.
JULY 26
6 P.M.
8 A.M.
JULY 27
6 P.M.
8 A.M.
JULY 28
6 P.M.
8 A.M.
JULY 29
6 P.M.
8 A.M.
JULY 30
6 P.M.
8 A.M.
JULY 31
6 P.M.
8 A.M.
AUGUST 1
6 P.M.
8 A.M.
AUGUST 2
6 P.M.
8 A.M.
AUGUST 3
6 P.M.
8 A.M.
AUGUST 4
6 P.M.

Wind Force _ ⊙ _ *Calm.* → *Light to Moderate.* → *Fresh to Strong.* → *Gale.* *Arrows fly with the Wind.*

# AUGUST, 1878.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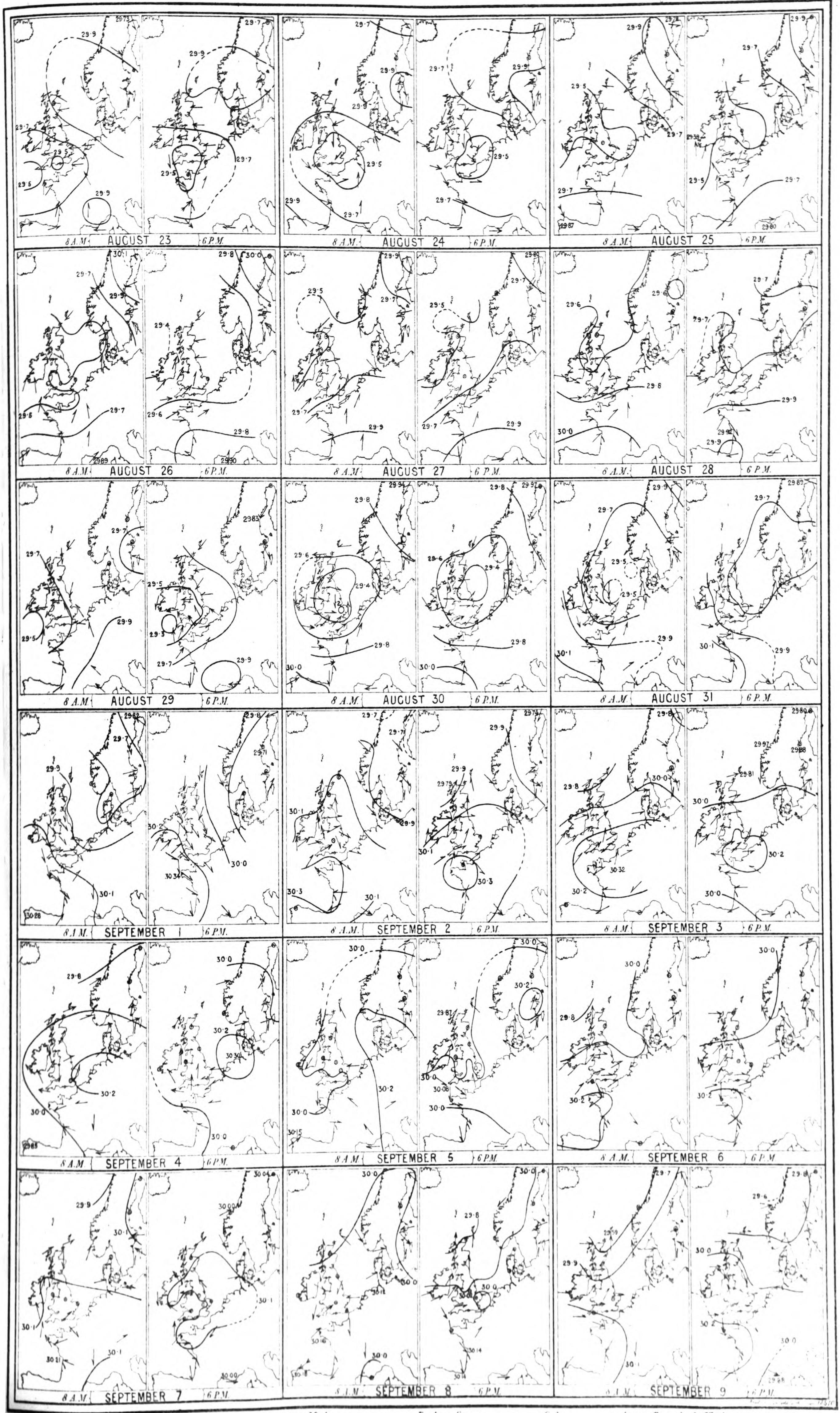
AUGUST 5
6 P.M.
8 A.M.
AUGUST 6
6 P.M.
8 A.M.
AUGUST 7
6 P.M.
8 A.M.
AUGUST 8
6 P.M.
8 A.M.
AUGUST 9
6 P.M.
8 A.M.
AUGUST 10
6 P.M.
8 A.M.
AUGUST 11
6 P.M.
8 A.M.
AUGUST 12
6 P.M.
8 A.M.
AUGUST 13
6 P.M.
8 A.M.
AUGUST 14
6 P.M.
8 A.M.
AUGUST 15
6 P.M.
8 A.M.
AUGUST 16
6 P.M.
8 A.M.
AUGUST 17
6 P.M.
8 A.M.
AUGUST 18
6 P.M.
8 A.M.
AUGUST 19
6 P.M.
8 A.M.
AUGUST 20
6 P.M.
8 A.M.
AUGUST 21
6 P.M.
8 A.M.
AUGUST 22
6 P.M.
Fred. Dangerfield, Lith. London.

Wind Force ○ Calm Light to Moderate → Fresh to Strong → Gale Arrows fly with the Wind

# AUGUST & SEPTEMBER, 1870.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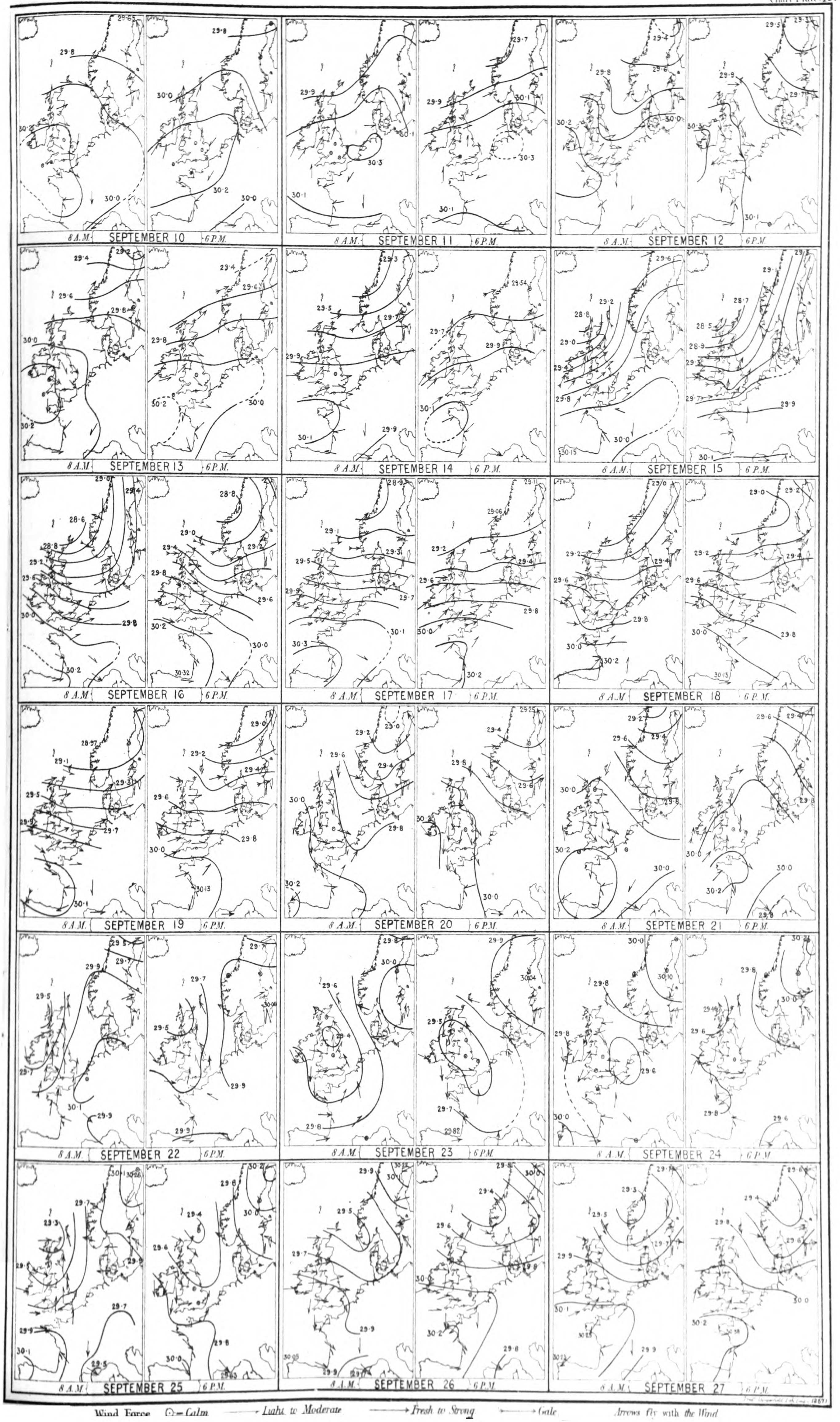
8 A.M. AUGUST 24 6 P.M.
8 A.M. AUGUST 25 6 P.M.
8 A.M. AUGUST 26 6 P.M.
8 A.M. AUGUST 27 6 P.M.
8 A.M. AUGUST 28 6 P.M.
8 A.M. AUGUST 29 6 P.M.
8 A.M. AUGUST 30 6 P.M.
8 A.M. AUGUST 31 6 P.M.
8 A.M. SEPTEMBER 1 6 P.M.
8 A.M. SEPTEMBER 2 6 P.M.
8 A.M. SEPTEMBER 3 6 P.M.
8 A.M. SEPTEMBER 4 6 P.M.
8 A.M. SEPTEMBER 5 6 P.M.
8 A.M. SEPTEMBER 6 6 P.M.
8 A.M. SEPTEMBER 7 6 P.M.
8 A.M. SEPTEMBER 8 6 P.M.
8 A.M. SEPTEMBER 9 6 P.M.

Wind Force ⊙ Calm ——— Light to Moderate ——→ Fresh to Strong. ——→ Gale. Arrows fly with the Wind

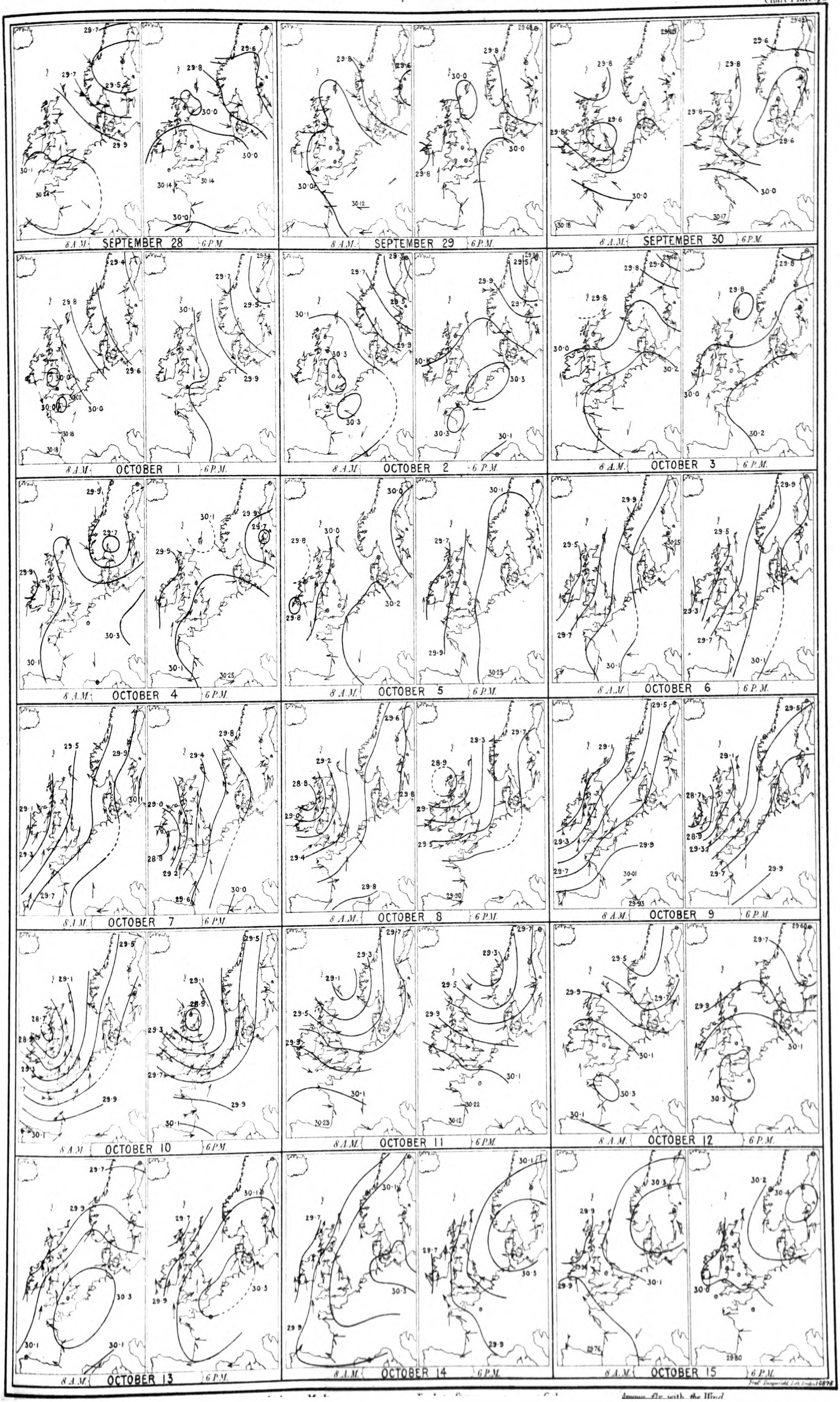
# SEPTEMBER, 1878.


8 A.M. SEPTEMBER 10 6 P.M.
8 A.M. SEPTEMBER 11 6 P.M.
8 A.M. SEPTEMBER 12 6 P.M.
8 A.M. SEPTEMBER 13 6 P.M.
8 A.M. SEPTEMBER 14 6 P.M.
8 A.M. SEPTEMBER 15 6 P.M.
8 A.M. SEPTEMBER 16 6 P.M.
8 A.M. SEPTEMBER 17 6 P.M.
8 A.M. SEPTEMBER 18 6 P.M.
8 A.M. SEPTEMBER 19 6 P.M.
8 A.M. SEPTEMBER 20 6 P.M.
8 A.M. SEPTEMBER 21 6 P.M.
8 A.M. SEPTEMBER 22 6 P.M.
8 A.M. SEPTEMBER 23 6 P.M.
8 A.M. SEPTEMBER 24 6 P.M.
8 A.M. SEPTEMBER 25 6 P.M.
8 A.M. SEPTEMBER 26 6 P.M.
8 A.M. SEPTEMBER 27 6 P.M.

Wind Force ⊙ = Calm ⟶ Light to Moderate ⟶ Fresh to Strong ⟶ Gale Arrows fly with the Wind

# SEPTEMBER & OCTOBER, 1878.

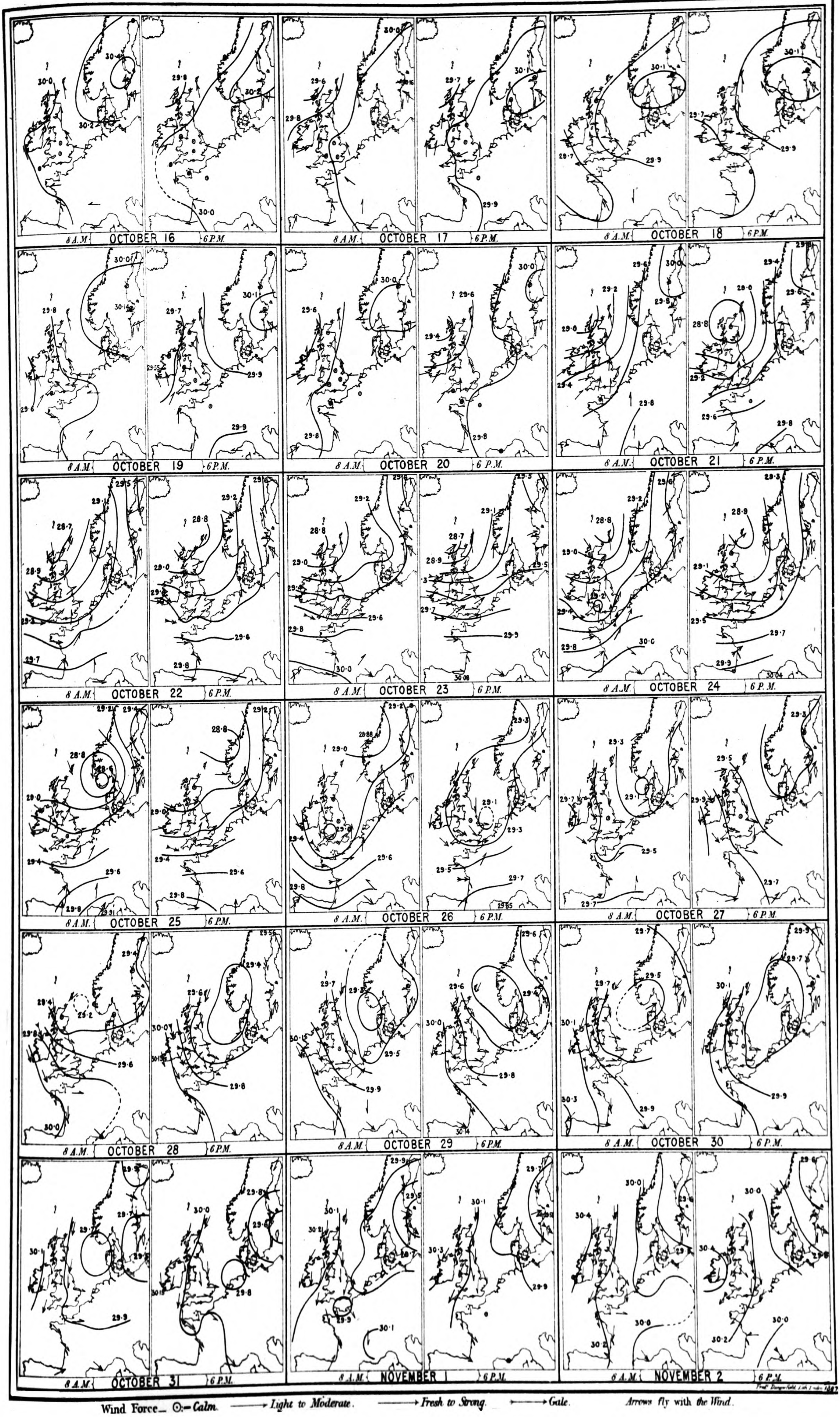
Chart Plate 16


8 A.M. SEPTEMBER 28 6 P.M.
8 A.M. SEPTEMBER 29 6 P.M.
8 A.M. SEPTEMBER 30 6 P.M.
8 A.M. OCTOBER 1 6 P.M.
8 A.M. OCTOBER 2 6 P.M.
8 A.M. OCTOBER 3 6 P.M.
8 A.M. OCTOBER 4 6 P.M.
8 A.M. OCTOBER 5 6 P.M.
8 A.M. OCTOBER 6 6 P.M.
8 A.M. OCTOBER 7 6 P.M.
8 A.M. OCTOBER 8 6 P.M.
8 A.M. OCTOBER 9 6 P.M.
8 A.M. OCTOBER 10 6 P.M.
8 A.M. OCTOBER 11 6 P.M.
8 A.M. OCTOBER 12 6 P.M.
8 A.M. OCTOBER 13 6 P.M.
8 A.M. OCTOBER 14 6 P.M.
8 A.M. OCTOBER 15 6 P.M.
29·7
29·5
29·9
30·1
30·0
29·8
29·6
30·3
30·2
29·3
29·1
28·9
28·7
29·0
28·8
29·2
29·4
30·4

Arrows fly with the Wind

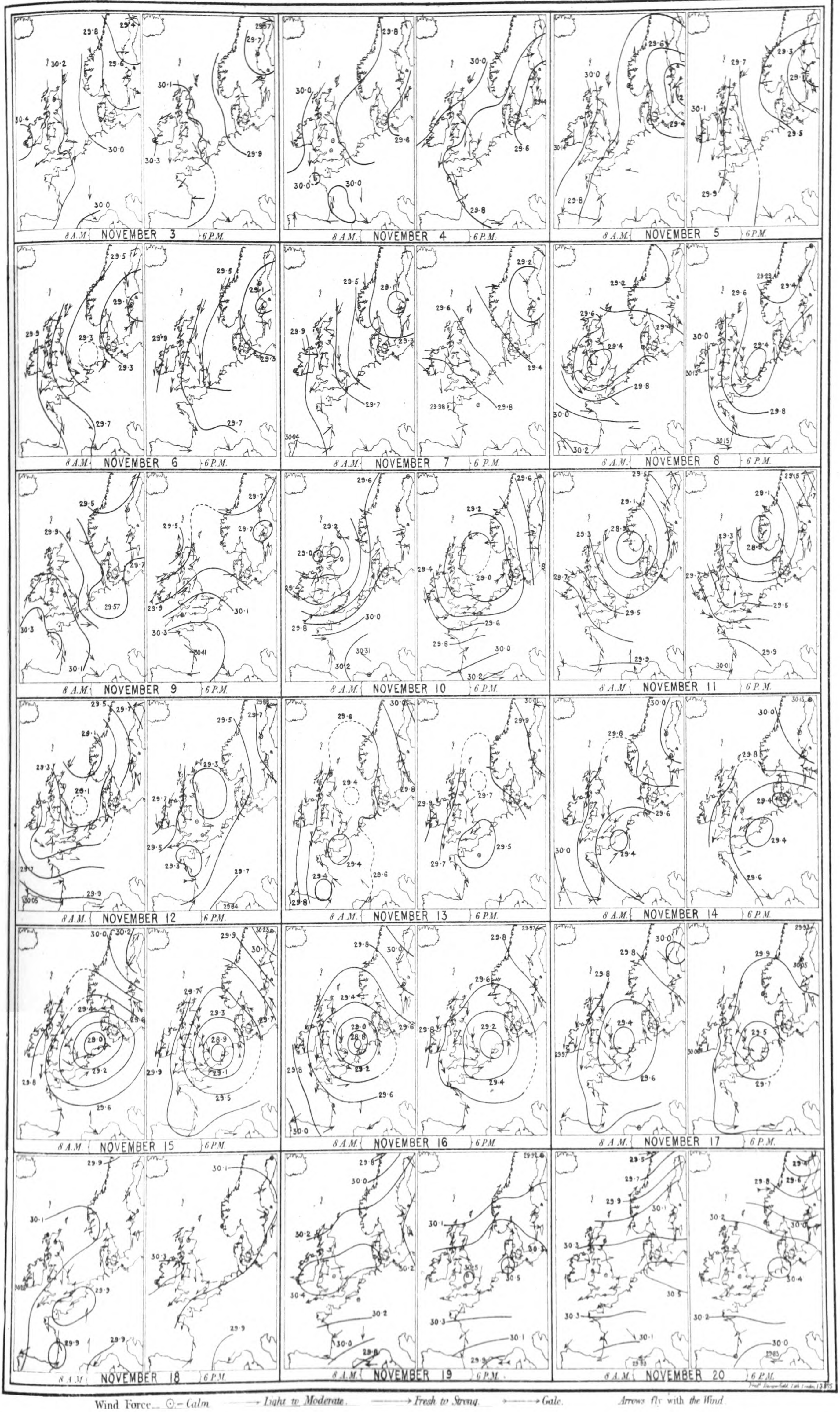
# OCTOBER & NOVEMBER, 1878.

Chart Plate. 17.


8 A.M. OCTOBER 16 6 P.M.
8 A.M. OCTOBER 17 6 P.M.
8 A.M. OCTOBER 18 6 P.M.
8 A.M. OCTOBER 19 6 P.M.
8 A.M. OCTOBER 20 6 P.M.
8 A.M. OCTOBER 21 6 P.M.
8 A.M. OCTOBER 22 6 P.M.
8 A.M. OCTOBER 23 6 P.M.
8 A.M. OCTOBER 24 6 P.M.
8 A.M. OCTOBER 25 6 P.M.
8 A.M. OCTOBER 26 6 P.M.
8 A.M. OCTOBER 27 6 P.M.
8 A.M. OCTOBER 28 6 P.M.
8 A.M. OCTOBER 29 6 P.M.
8 A.M. OCTOBER 30 6 P.M.
8 A.M. OCTOBER 31 6 P.M.
8 A.M. NOVEMBER 1 6 P.M.
8 A.M. NOVEMBER 2 6 P.M.

*Wind Force*— ⊙—*Calm.* → *Light to Moderate.* → *Fresh to Strong.* → *Gale.* *Arrows fly with the Wind.*

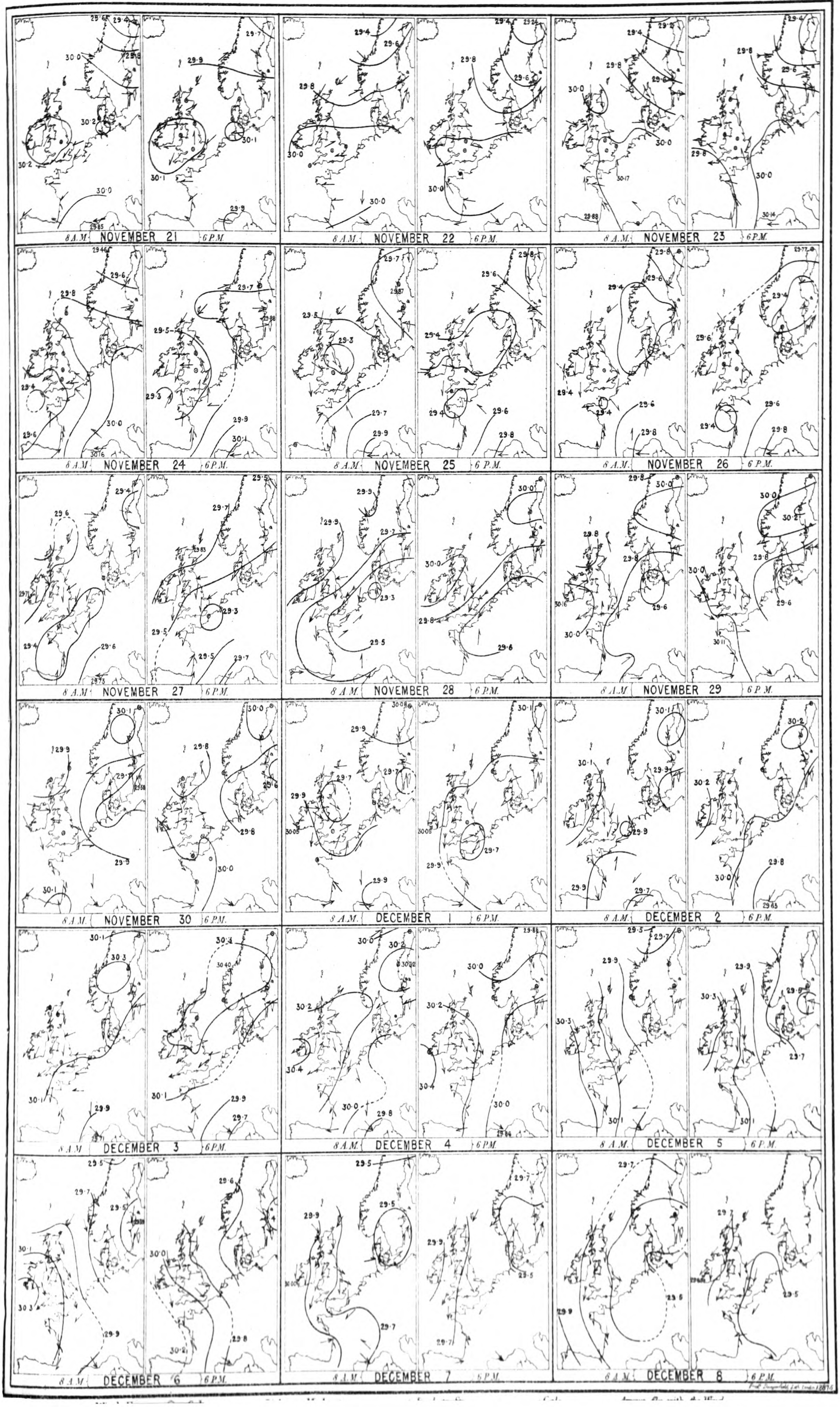
# NOVEMBER, 1878.


8 A.M. NOVEMBER 3 6 P.M.
8 A.M. NOVEMBER 4 6 P.M.
8 A.M. NOVEMBER 5 6 P.M.
8 A.M. NOVEMBER 6 6 P.M.
8 A.M. NOVEMBER 7 6 P.M.
8 A.M. NOVEMBER 8 6 P.M.
8 A.M. NOVEMBER 9 6 P.M.
8 A.M. NOVEMBER 10 6 P.M.
8 A.M. NOVEMBER 11 6 P.M.
8 A.M. NOVEMBER 12 6 P.M.
8 A.M. NOVEMBER 13 6 P.M.
8 A.M. NOVEMBER 14 6 P.M.
8 A.M. NOVEMBER 15 6 P.M.
8 A.M. NOVEMBER 16 6 P.M.
8 A.M. NOVEMBER 17 6 P.M.
8 A.M. NOVEMBER 18 6 P.M.
8 A.M. NOVEMBER 19 6 P.M.
8 A.M. NOVEMBER 20 6 P.M.

Wind Force ⊙ – Calm → Light to Moderate. → Fresh to Strong. → Gale. Arrows fly with the Wind.

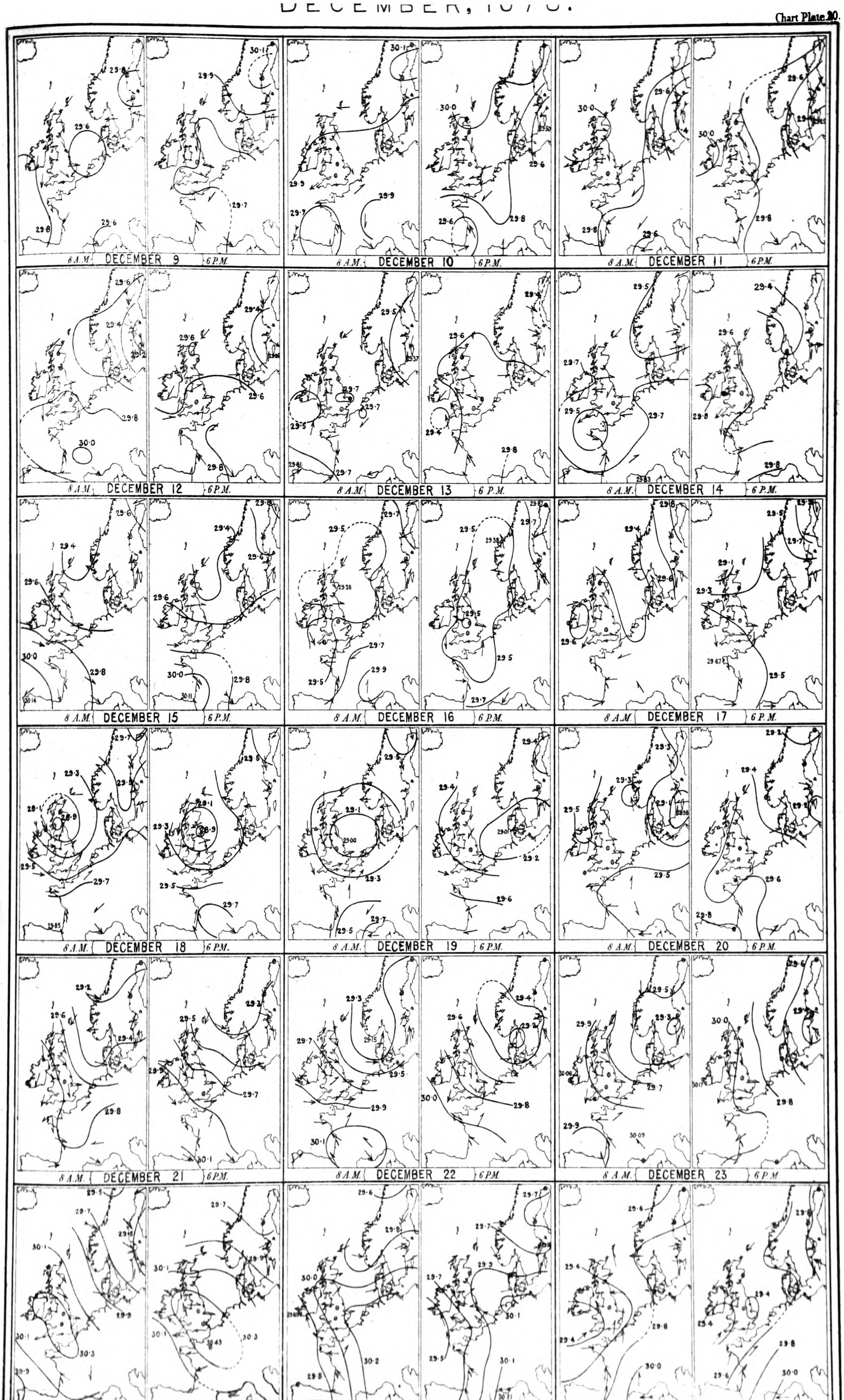
# NOVEMBER & DECEMBER, 1878.

Chart Plate 19.


8 A.M. NOVEMBER 21 6 P.M.
8 A.M. NOVEMBER 22 6 P.M.
8 A.M. NOVEMBER 23 6 P.M.
8 A.M. NOVEMBER 24 6 P.M.
8 A.M. NOVEMBER 25 6 P.M.
8 A.M. NOVEMBER 26 6 P.M.
8 A.M. NOVEMBER 27 6 P.M.
8 A.M. NOVEMBER 28 6 P.M.
8 A.M. NOVEMBER 29 6 P.M.
8 A.M. NOVEMBER 30 6 P.M.
8 A.M. DECEMBER 1 6 P.M.
8 A.M. DECEMBER 2 6 P.M.
8 A.M. DECEMBER 3 6 P.M.
8 A.M. DECEMBER 4 6 P.M.
8 A.M. DECEMBER 5 6 P.M.
8 A.M. DECEMBER 6 6 P.M.
8 A.M. DECEMBER 7 6 P.M.
8 A.M. DECEMBER 8 6 P.M.

# DECEMBER, 1876.

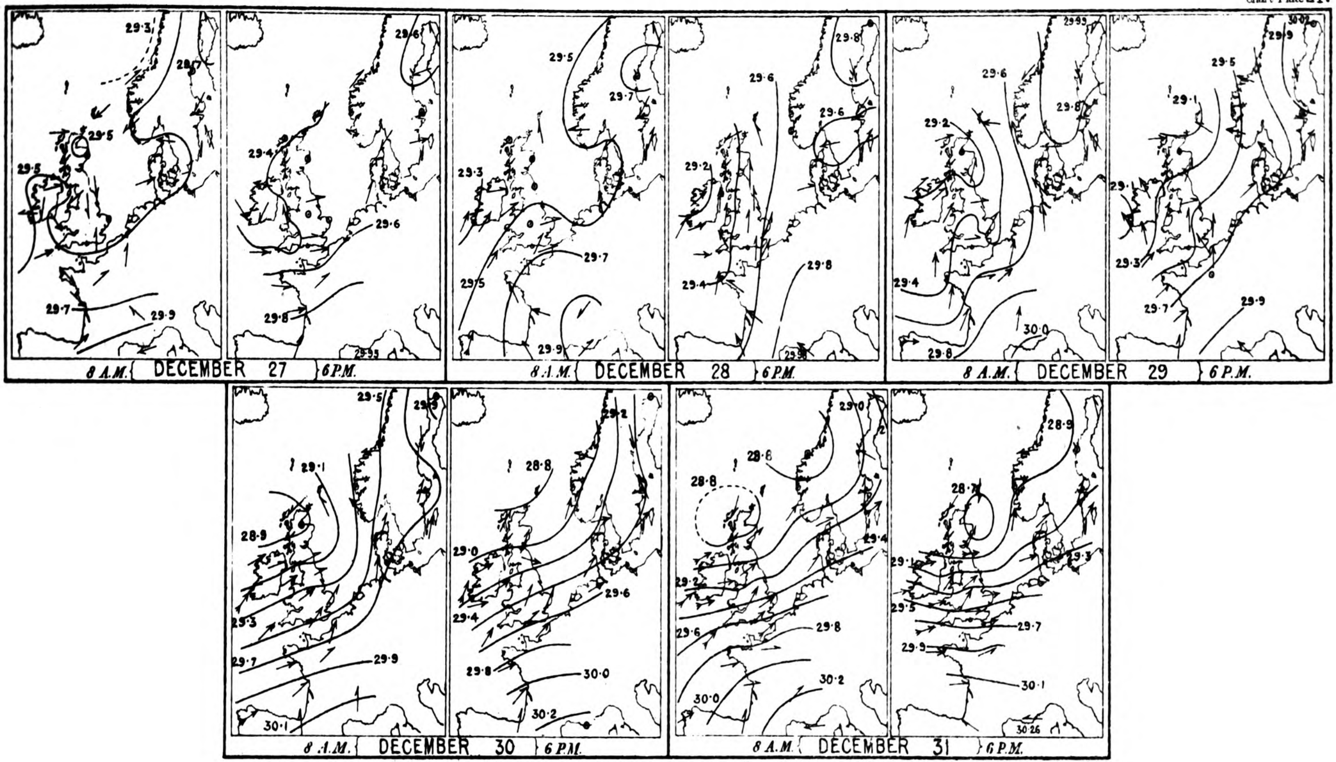
Chart Plate 20.


8 A.M.
DECEMBER 9
6 P.M.
8 A.M.
DECEMBER 10
6 P.M.
8 A.M.
DECEMBER 11
6 P.M.
8 A.M.
DECEMBER 12
6 P.M.
8 A.M.
DECEMBER 13
6 P.M.
8 A.M.
DECEMBER 14
6 P.M.
8 A.M.
DECEMBER 15
6 P.M.
8 A.M.
DECEMBER 16
6 P.M.
8 A.M.
DECEMBER 17
6 P.M.
8 A.M.
DECEMBER 18
6 P.M.
8 A.M.
DECEMBER 19
6 P.M.
8 A.M.
DECEMBER 20
6 P.M.
8 A.M.
DECEMBER 21
6 P.M.
8 A.M.
DECEMBER 22
6 P.M.
8 A.M.
DECEMBER 23
6 P.M.
8 A.M.
DECEMBER 24
6 P.M.
8 A.M.
DECEMBER 25
6 P.M.
8 A.M.
DECEMBER 26
6 P.M.

Wind Force.— ⊙— Calm. *Light to Moderate.* ——→ *Fresh to Strong.* ——→ *Gale.* *Arrows fly with the Wind.*

# DECEMBER, 1878.

Chart Plate 21.

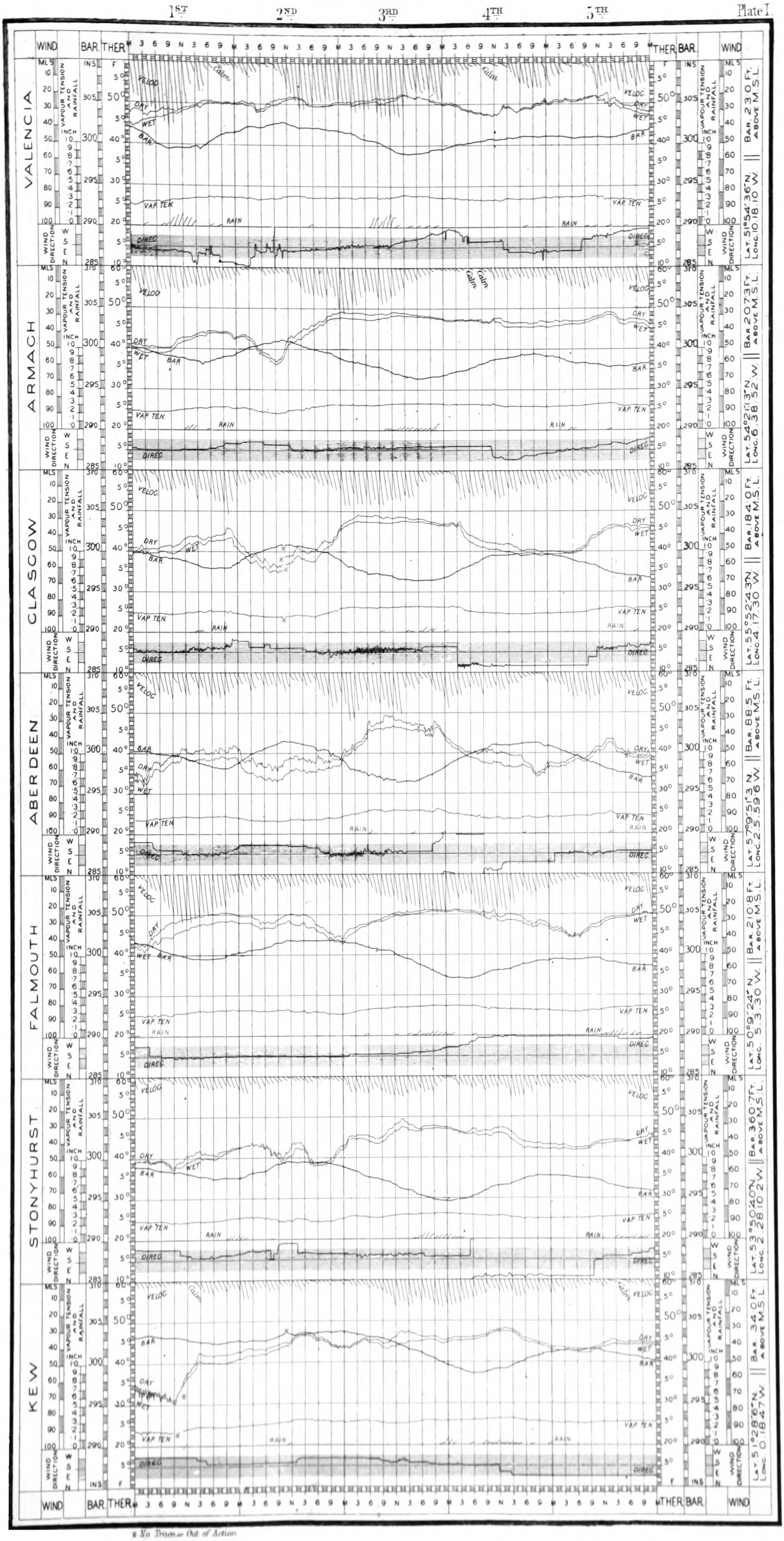

29·3
28·7
29·5
29·5
29·7
29·9
8 A.M. DECEMBER 27 6 P.M.
29·8
29·4
29·6
29·8
29·95
29·5
29·7
29·3
29·7
29·5
29·9
8 A.M. DECEMBER 28 6 P.M.
29·8
29·6
29·6
29·2
29·8
29·4
29·95
29·95
29·6
29·2
29·8
29·4
30·0
29·8
8 A.M. DECEMBER 29 6 P.M.
30·0
29·9
29·5
29·1
29·3
29·7
29·9
29·5
29·1
28·9
29·3
29·7
29·9
30·1
8 A.M. DECEMBER 30 6 P.M.
29·2
28·8
29·0
29·6
29·4
29·8
30·0
30·2
29·0
29·8
28·8
29·4
29·2
29·6
29·8
30·2
30·0
8 A.M. DECEMBER 31 6 P.M.
28·9
28·7
29·1
29·3
29·5
29·7
29·9
30·1
30·26

Wind Force— ⊙:— *Calm.* ⟶ *Light to Moderate.* ⟶ *Fresh to Strong.* ⟶ *Gale.* *Arrows fly with the Wind.*

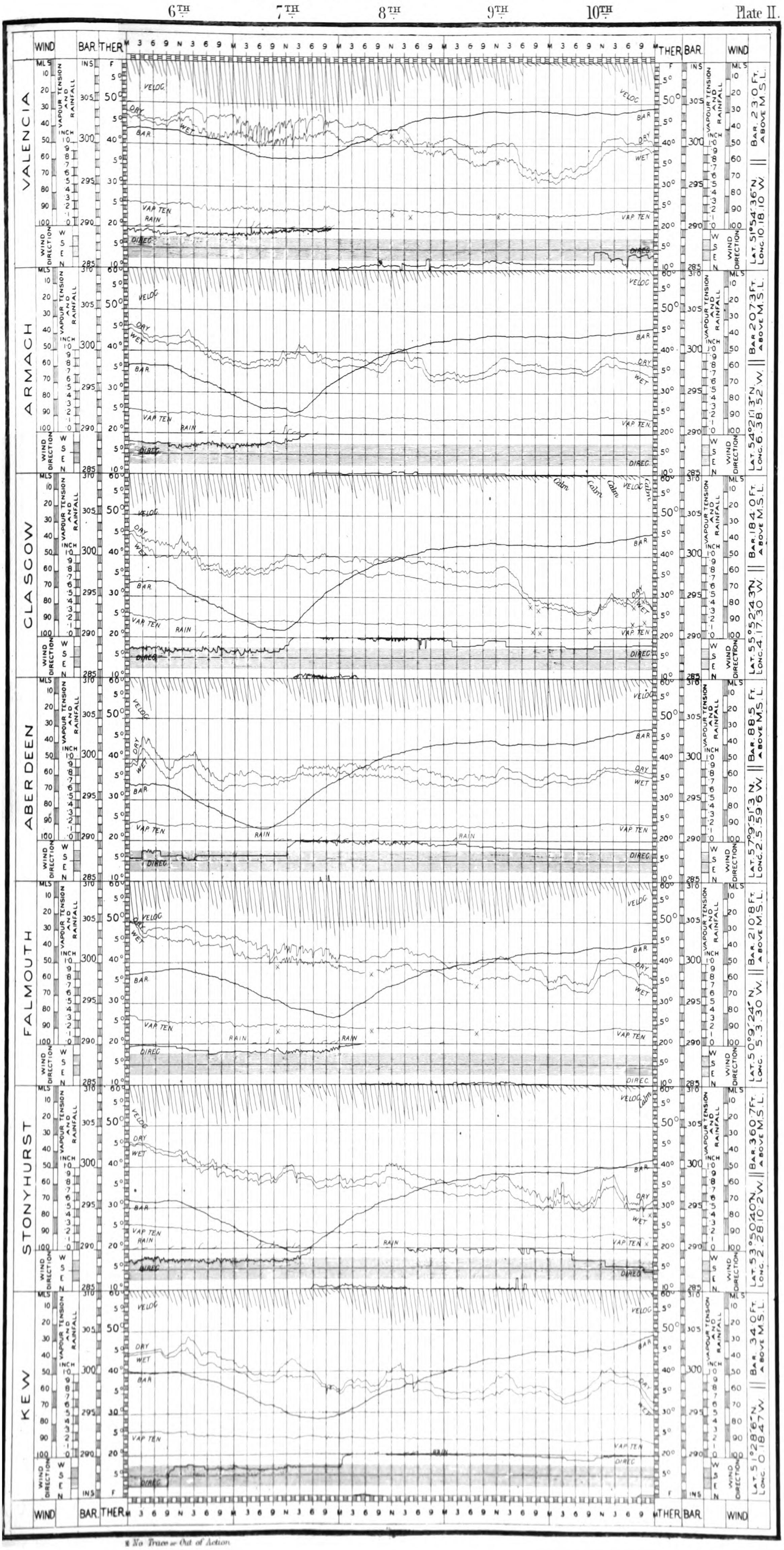
Fredk Dangerfield Lith. London 13876.

# JANUARY _ 1878.

Plate I.



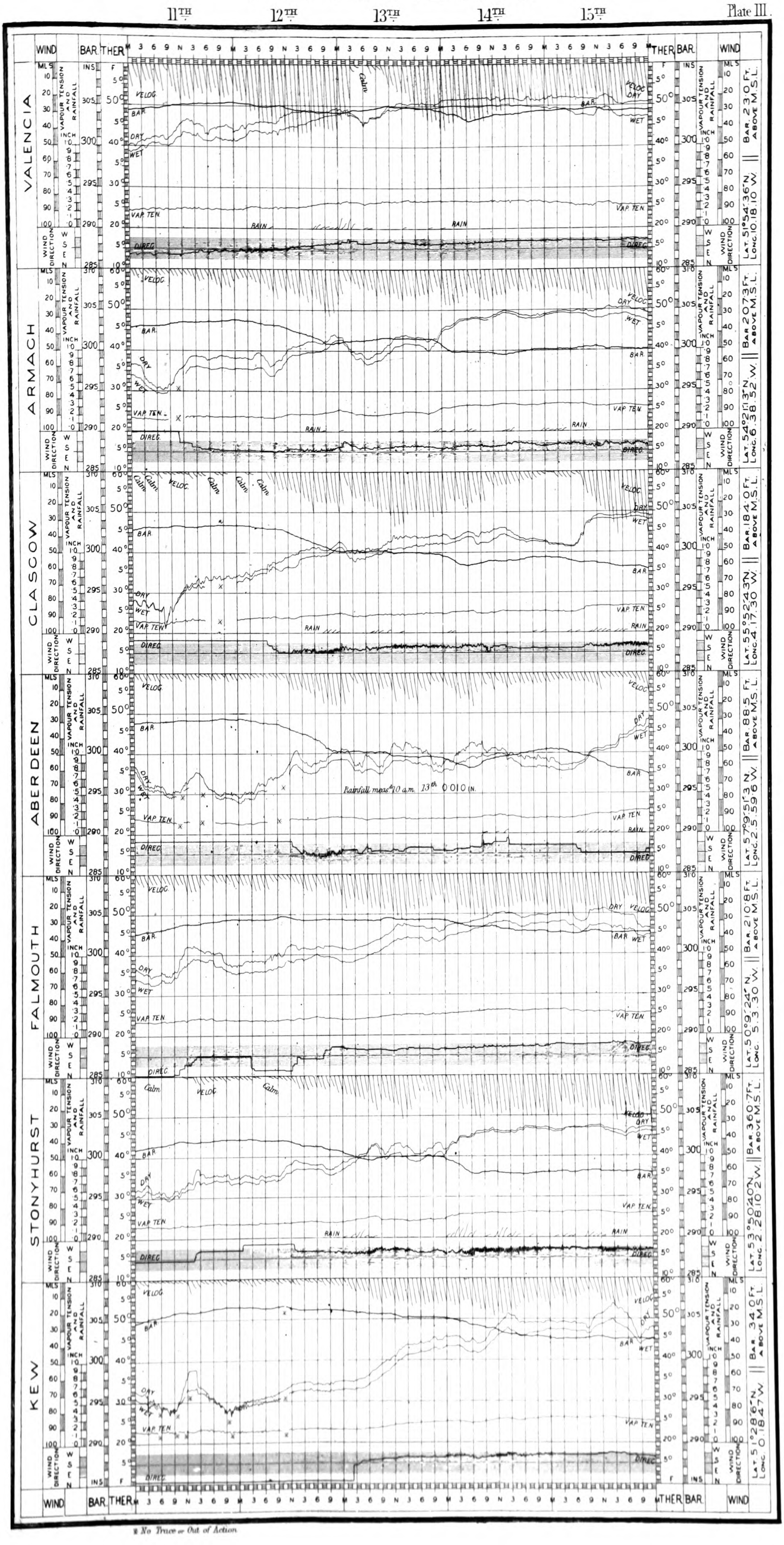
* No Trace, or Out of Action.



× No Trace or Out of Action

# JANUARY 1878.

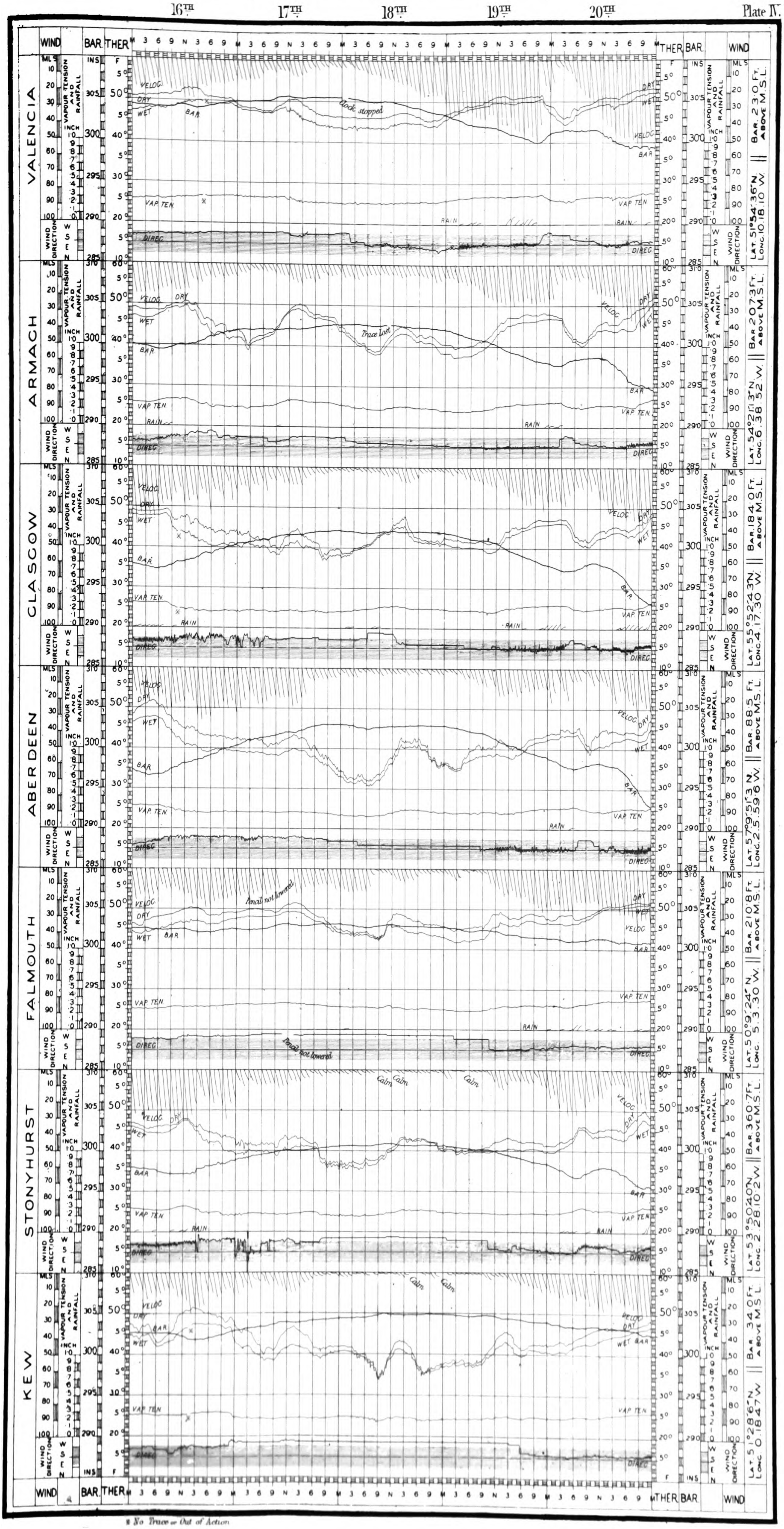
Plate III.



× No Trace or Out of Action

# JANUARY — 1878.

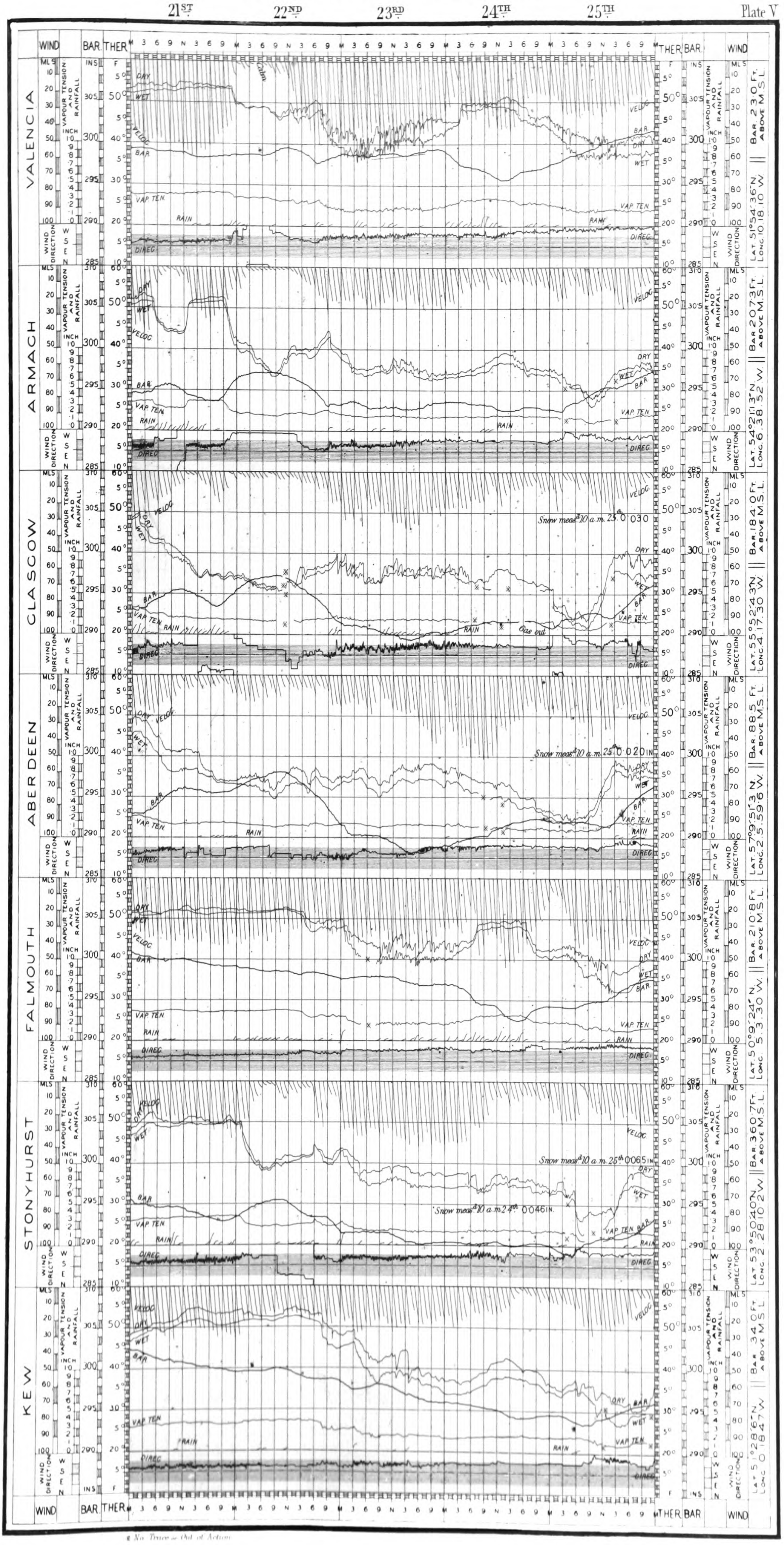
Plate IV.



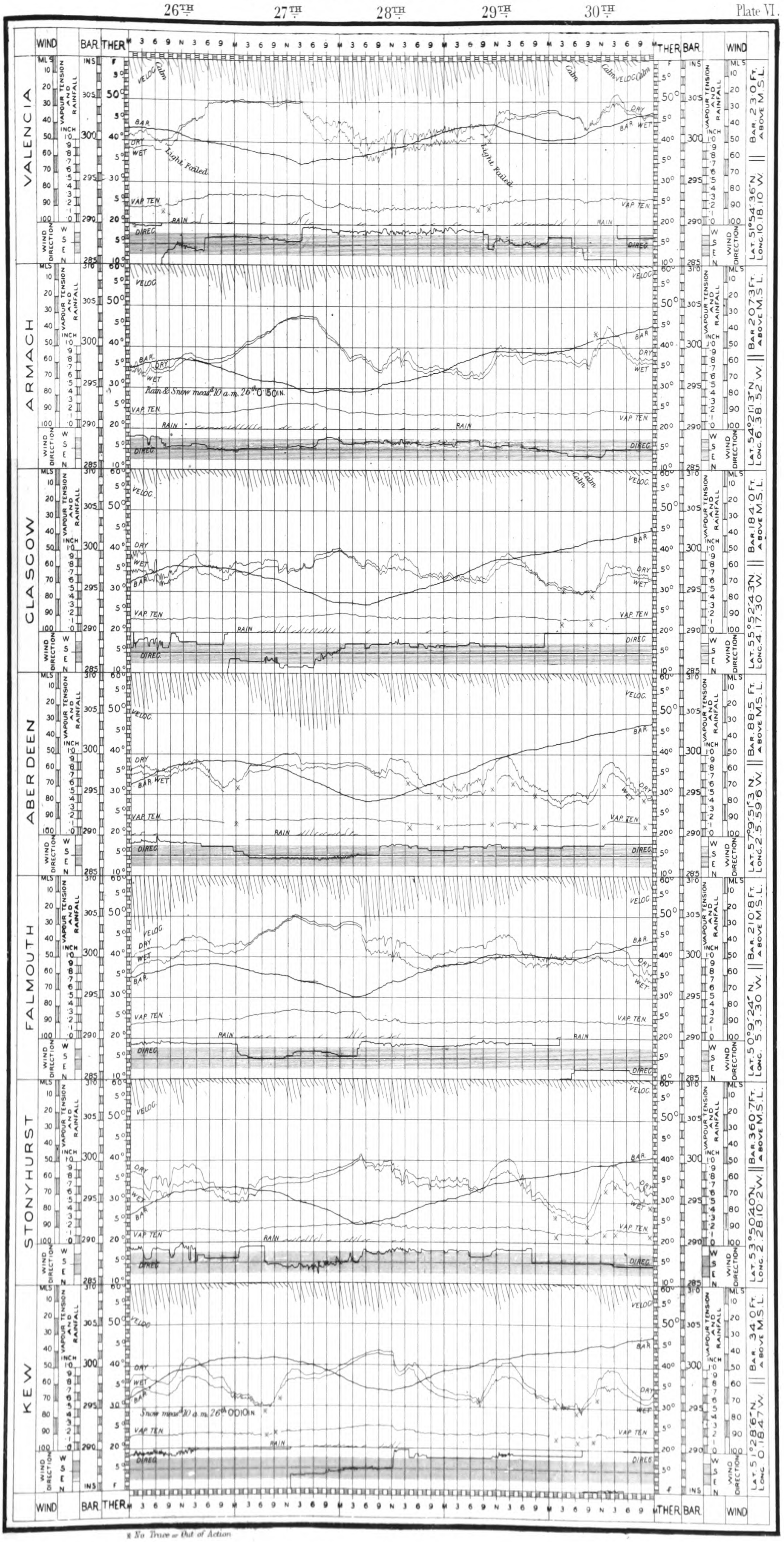
* No Trace or Out of Action

# JANUARY — 1878.

Plate V



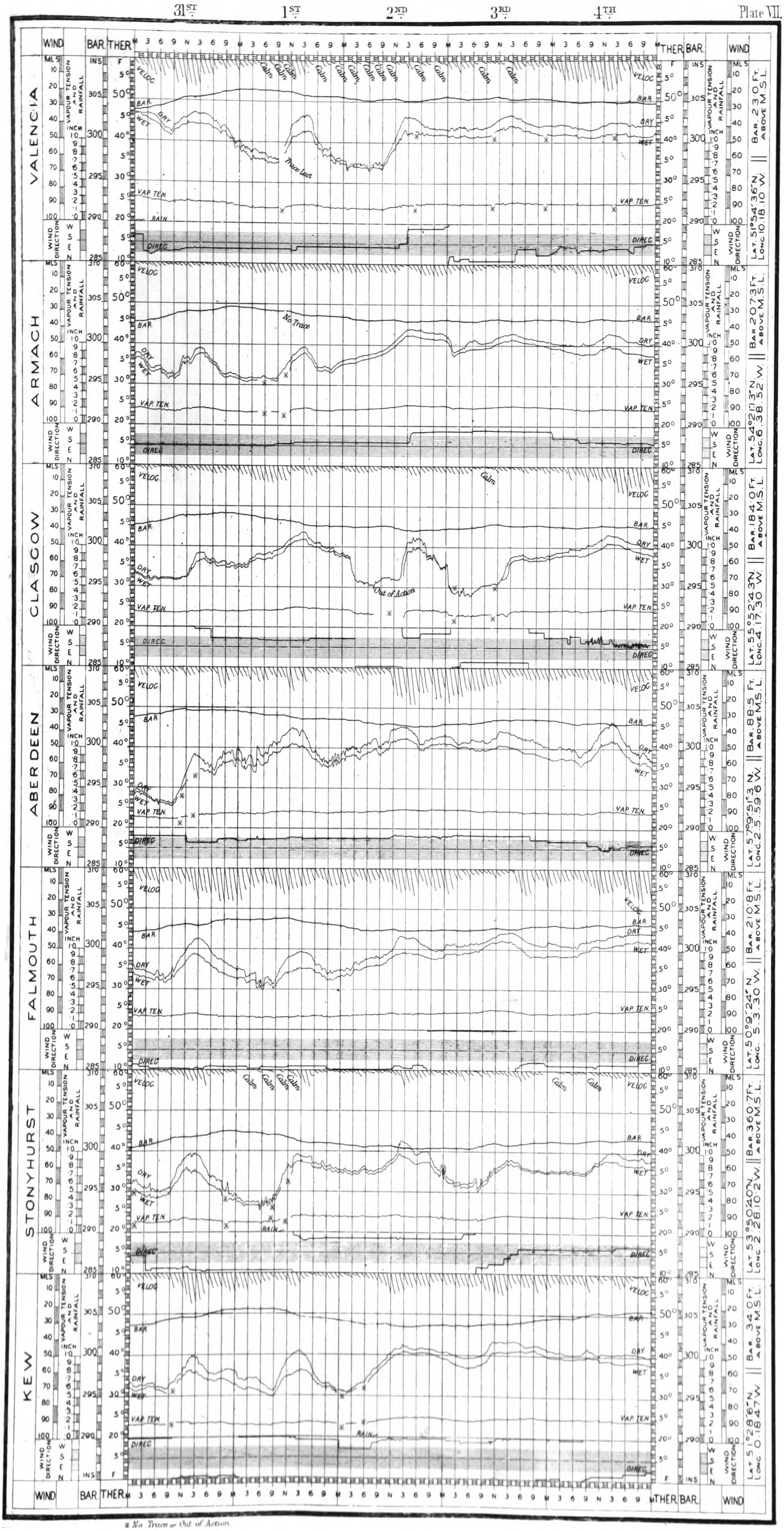
× No Trace = Out of Action



× No Trace = Out of Action

# JANUARY & FEBRUARY — 1878.

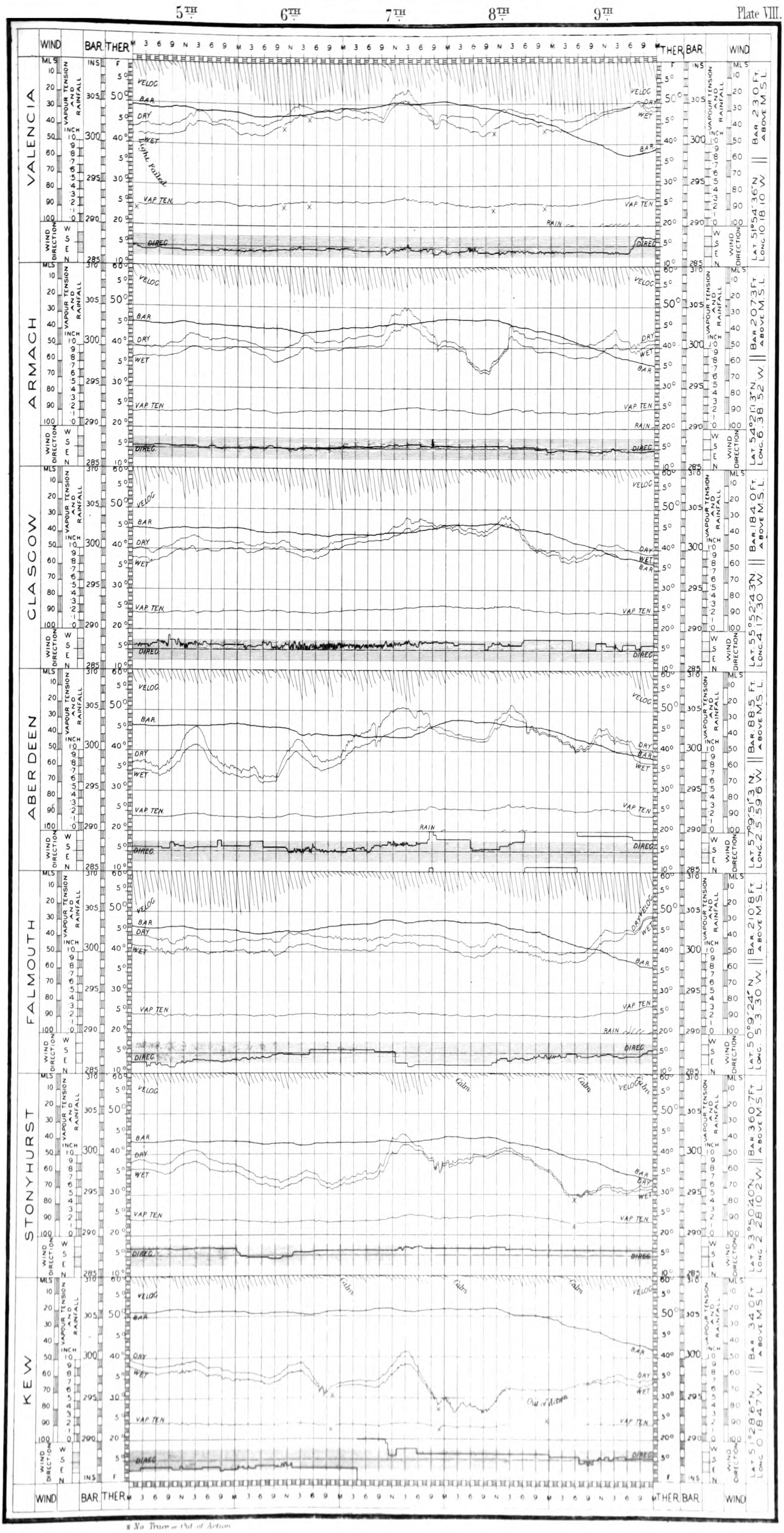
Plate VII.



× No Trace = Out of Action

F E B R U A R Y — 1 8 7 8.

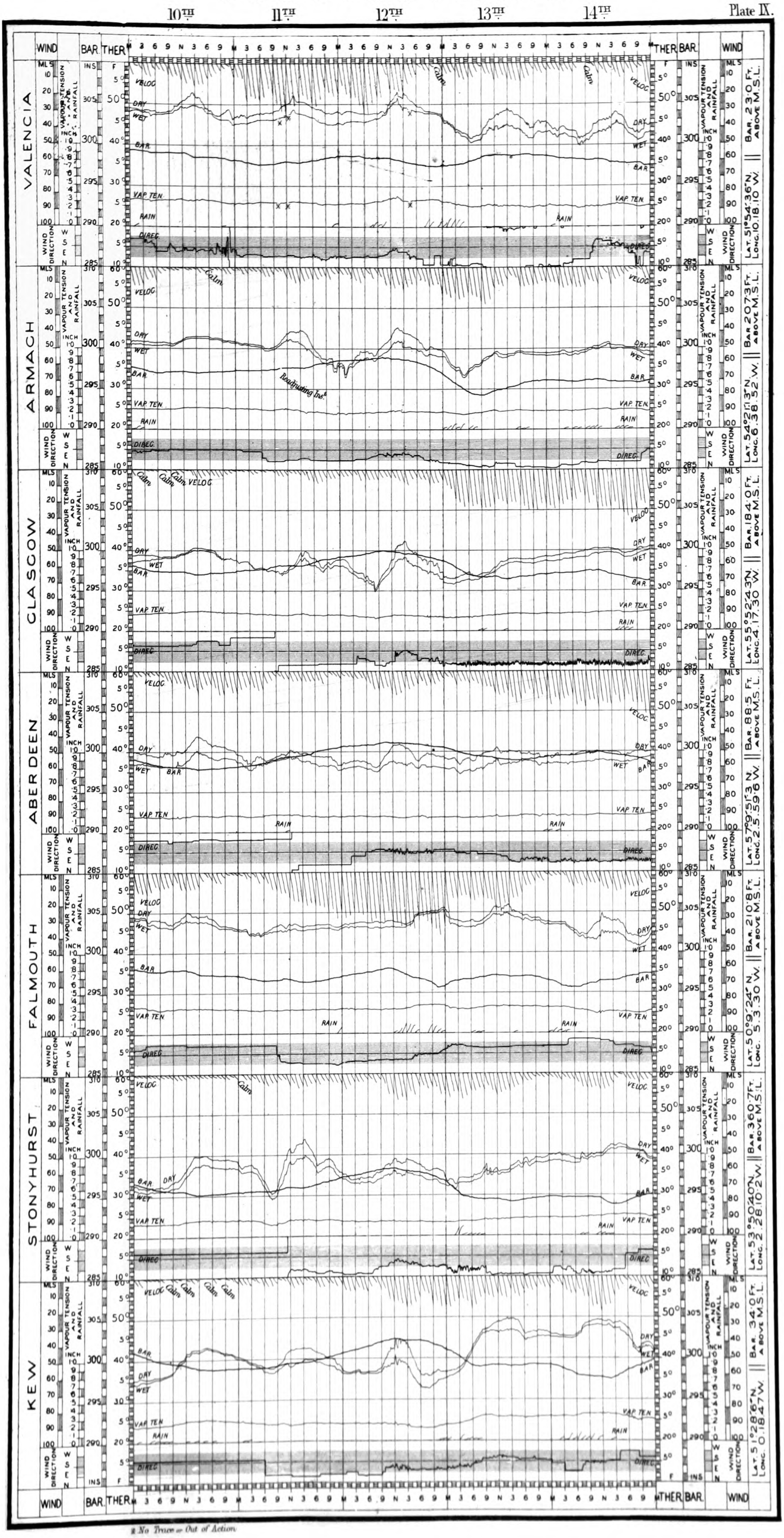
Plate VIII.



x No Trace or Out of Action

# FEBRUARY — 1878.

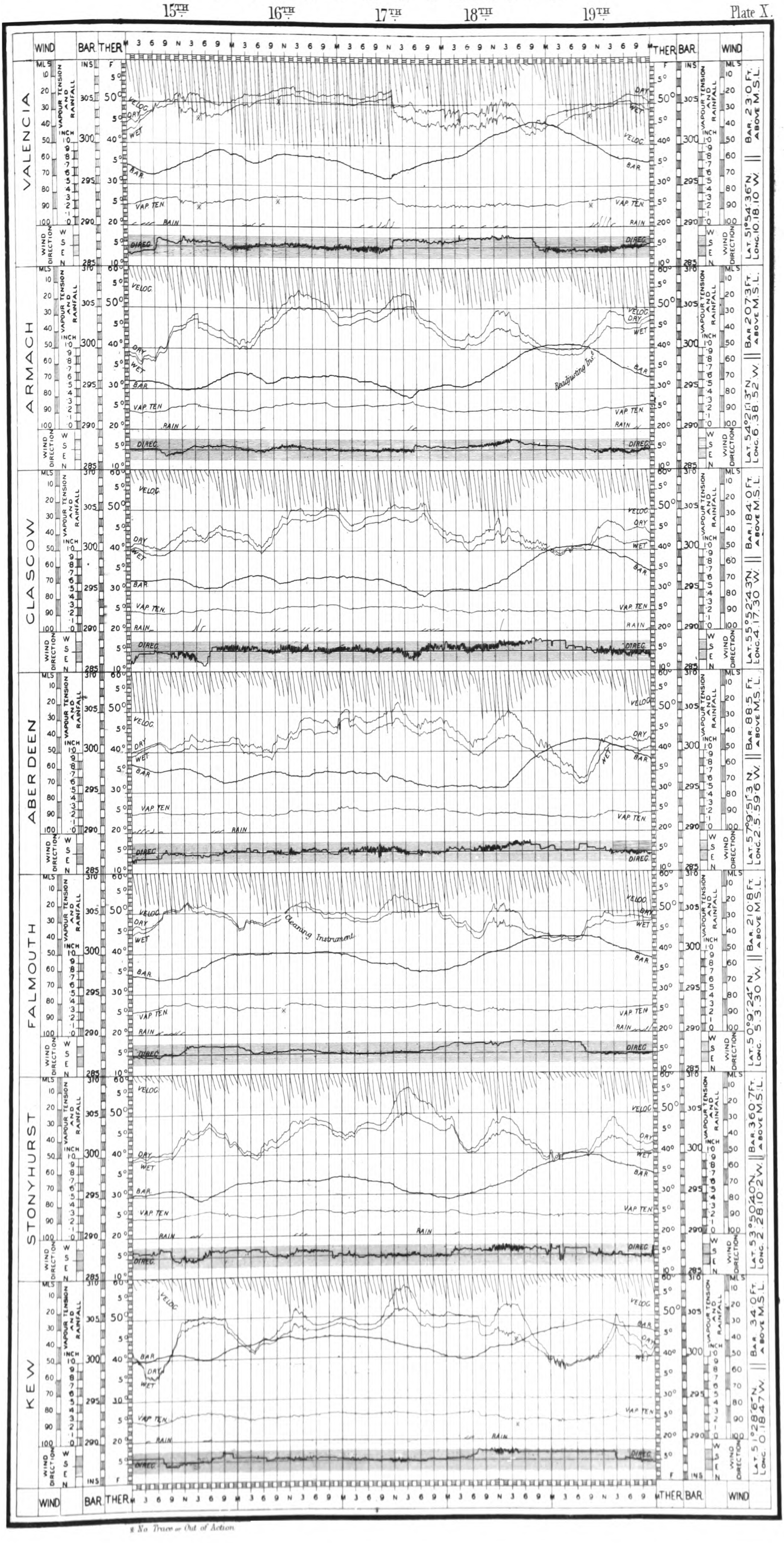
Plate IX.



No Trace = Out of Action

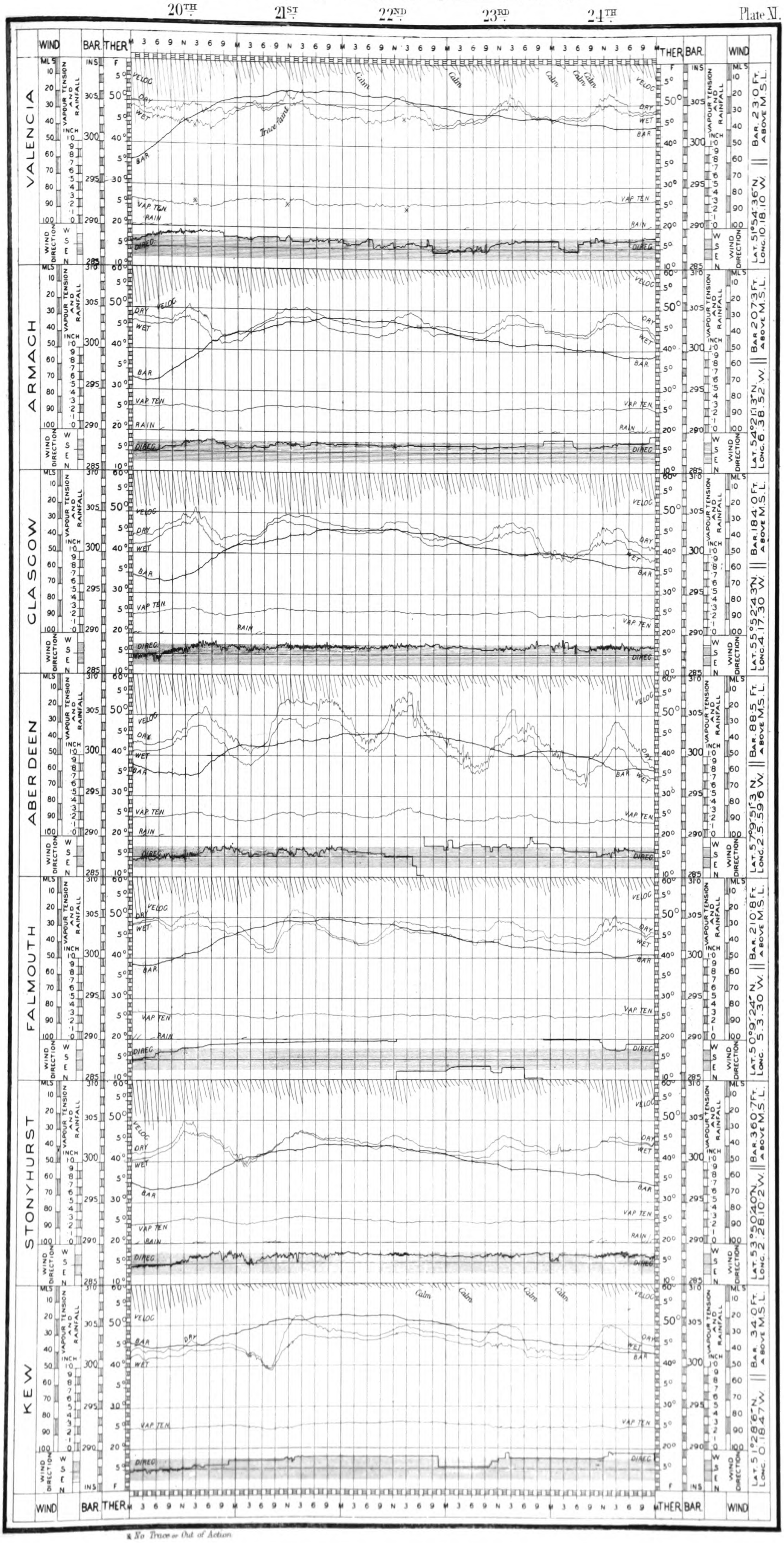
# FEBRUARY — 1878.

Plate X.



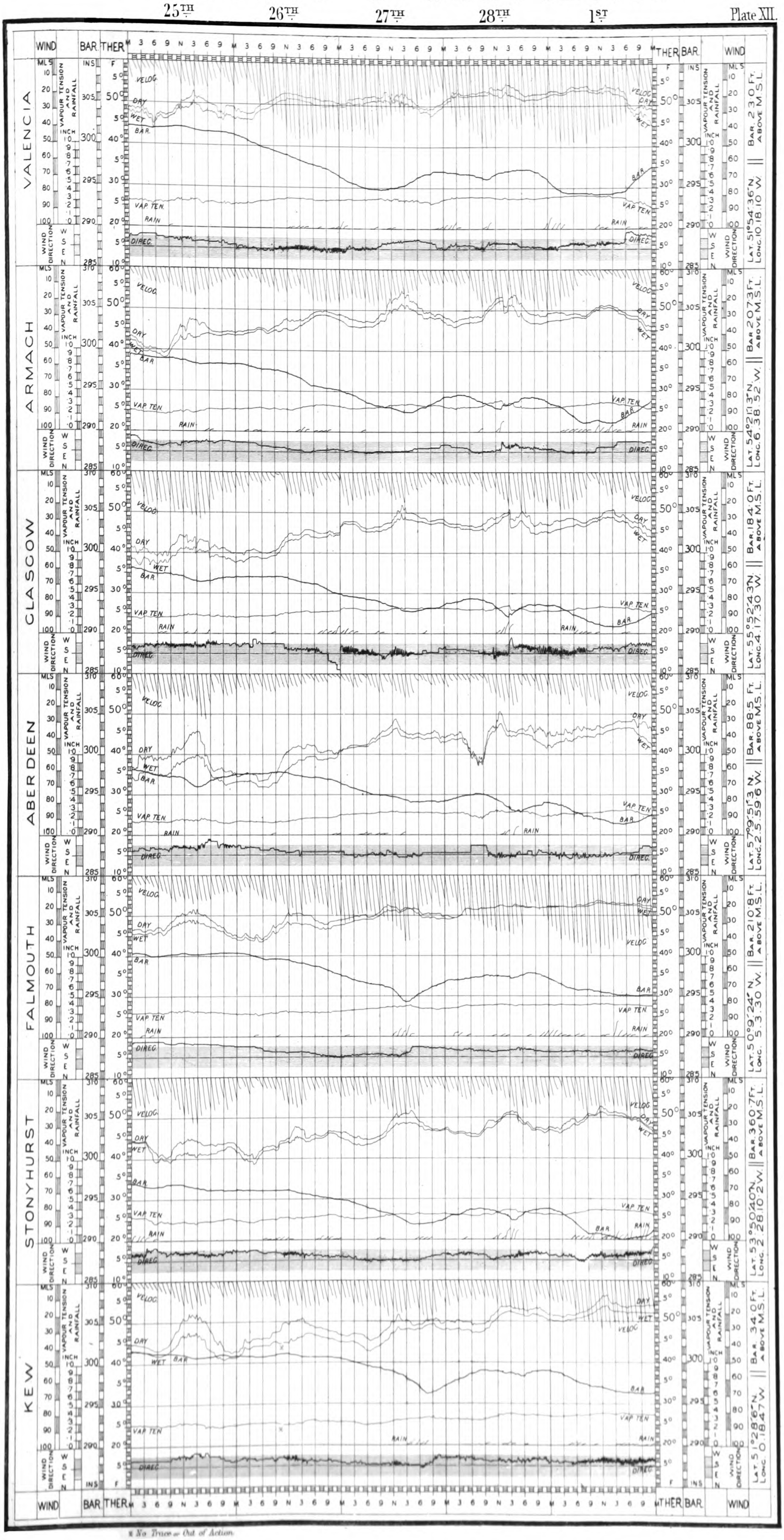
* No Trace or Out of Action.

Plate XI.



✱ *No Trace or Out of Action*

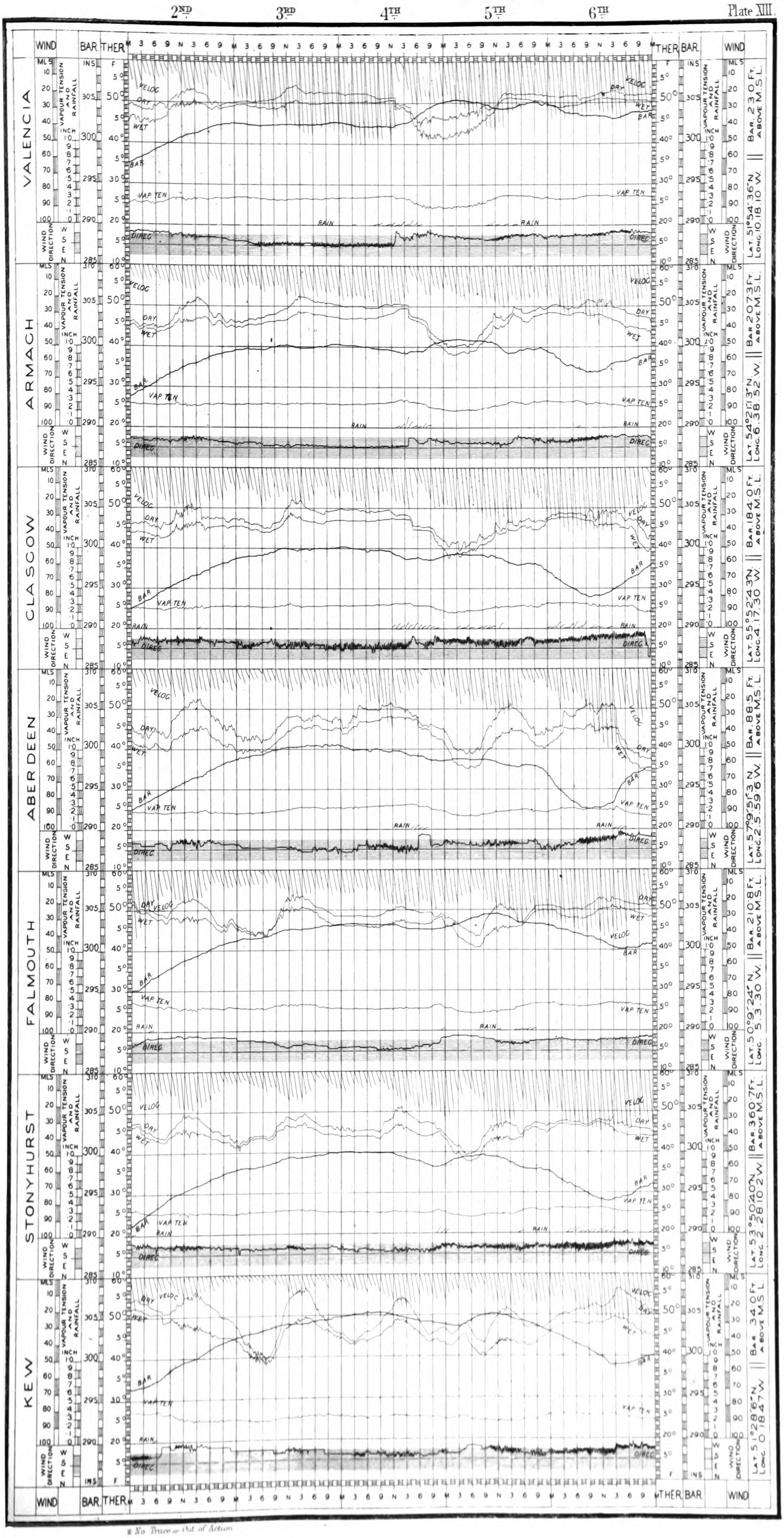
FEBRUARY & MARCH — 1878.



× No Trace = Out of Action.

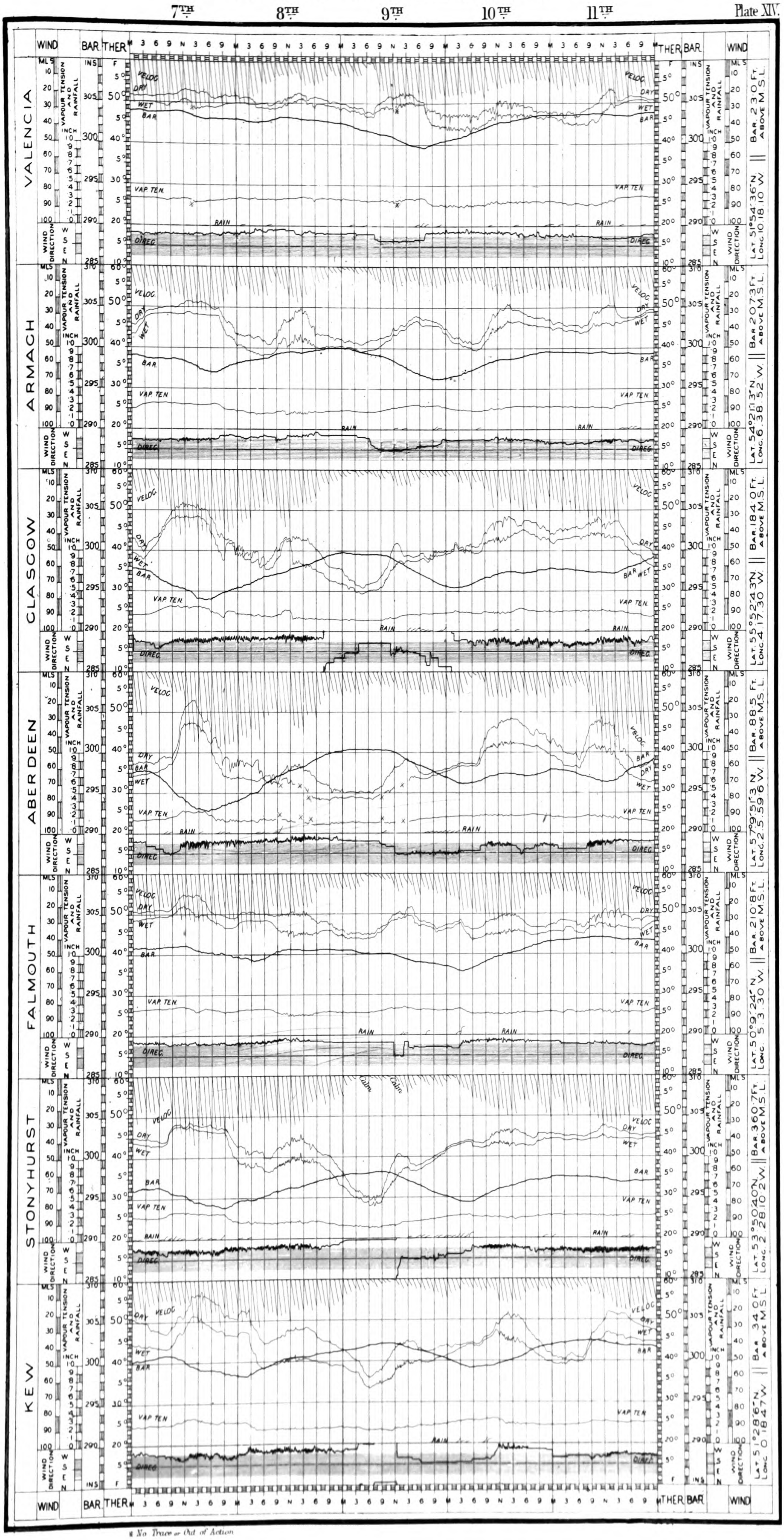
# M A R C H — 1 8 7 8.

Plate XIII.



* No Trace or Out of Action

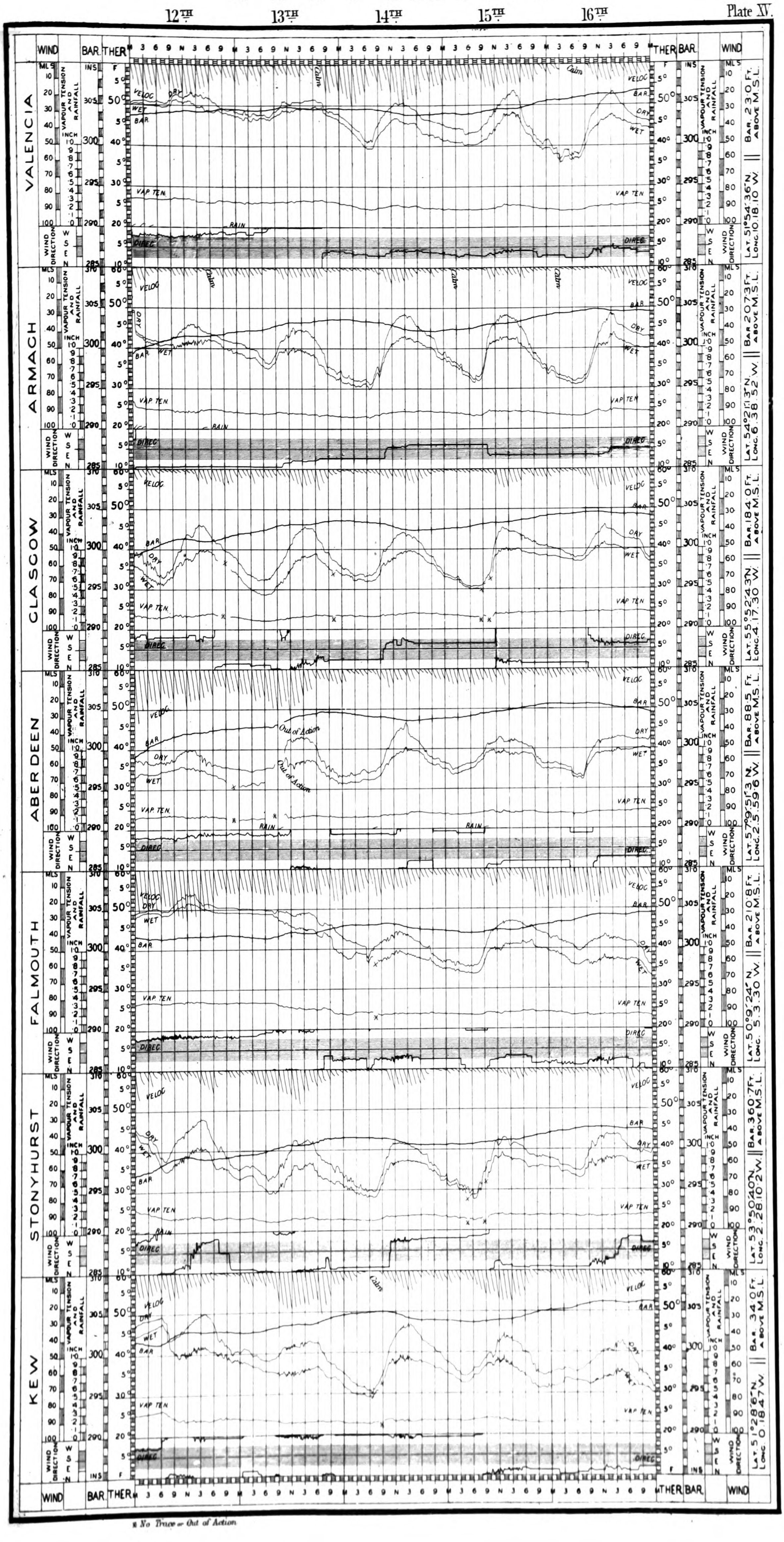
Plate XIV.



* No Trace or Out of Action

MARCH — 1878.

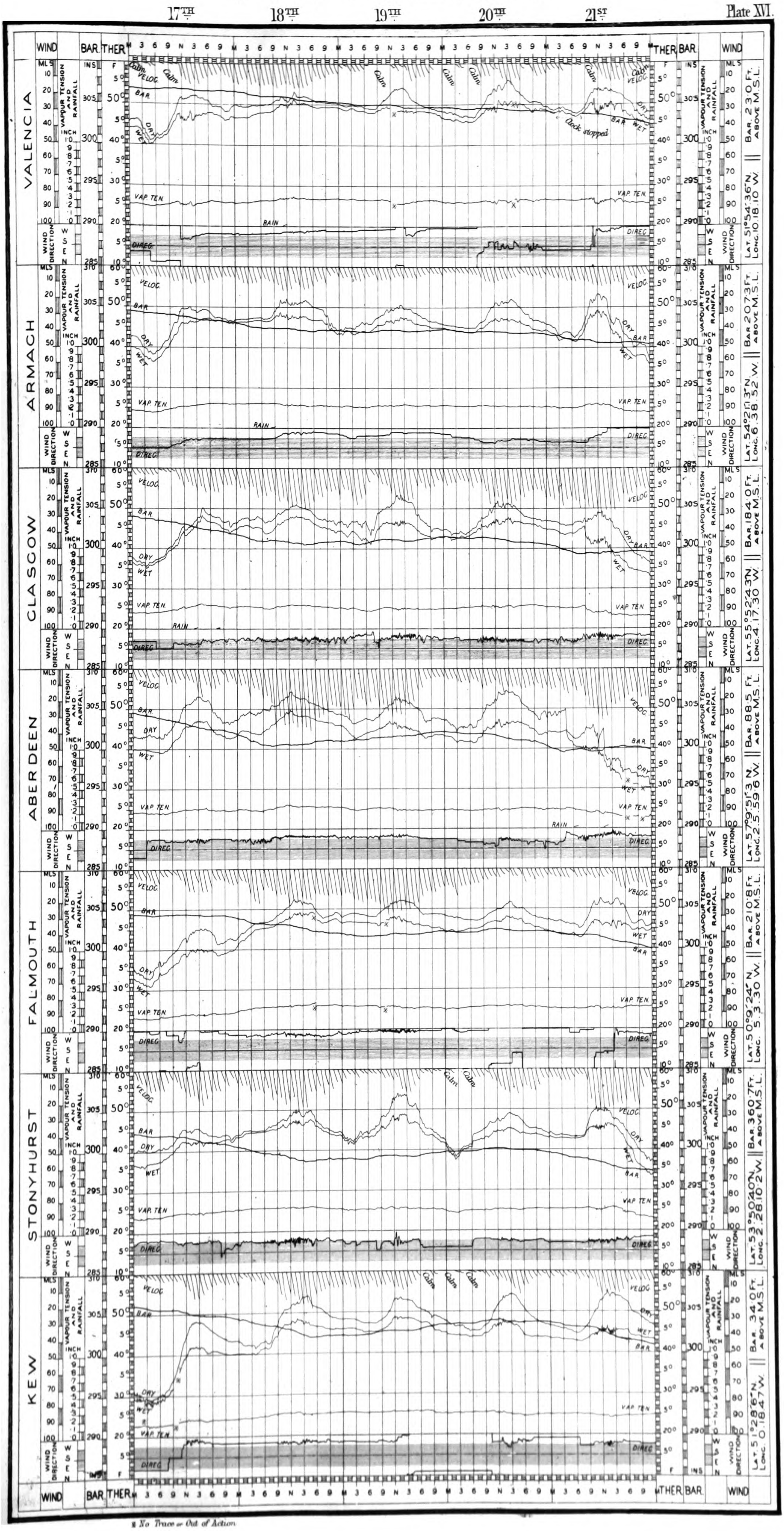
Plate XV.



x No Trace = Out of Action

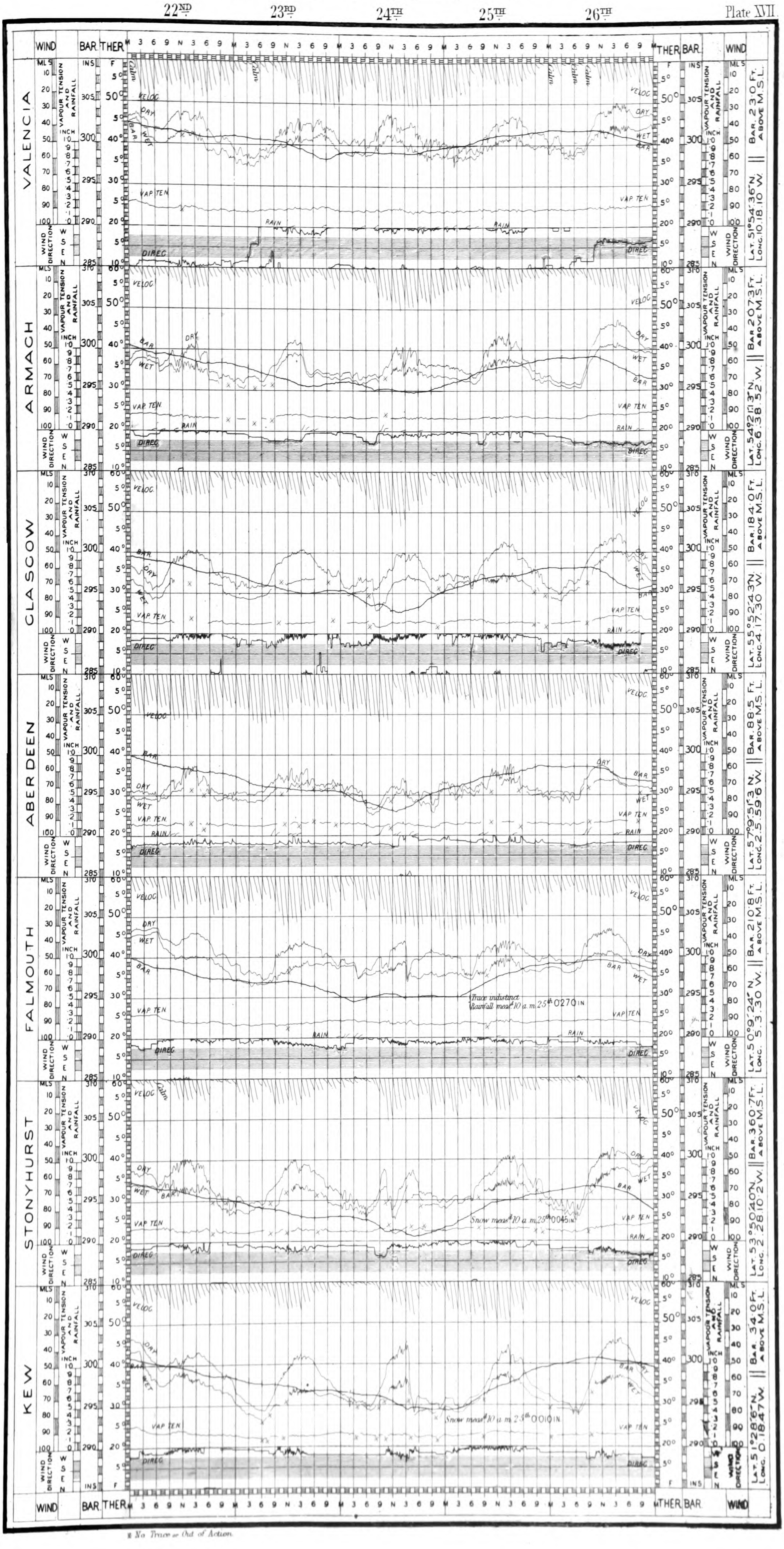
MARCH — 1878.

Plate XVI.



* No Trace or Out of Action

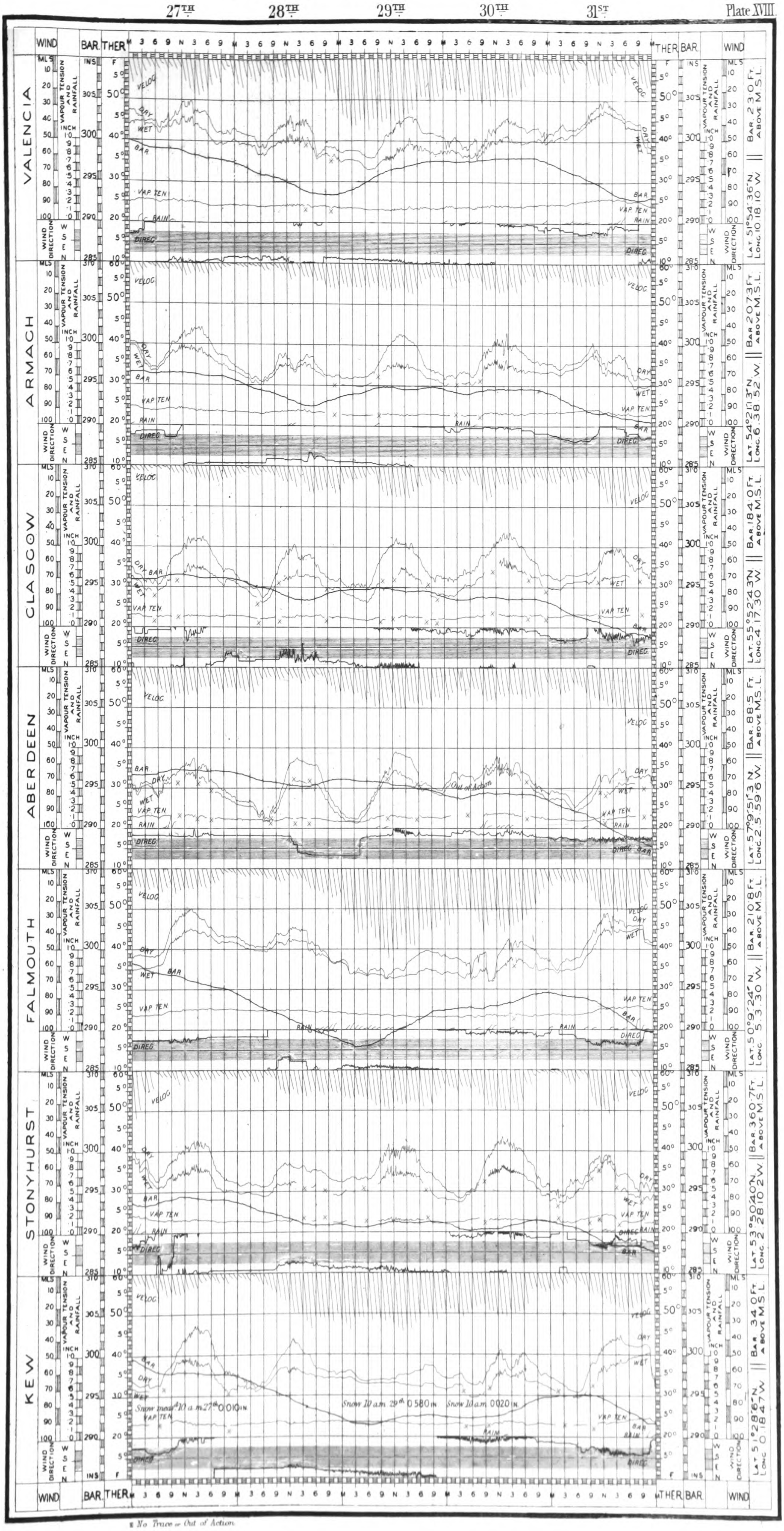
# MARCH 1878.



× No Trace or Out of Action

## MARCH — 1878.

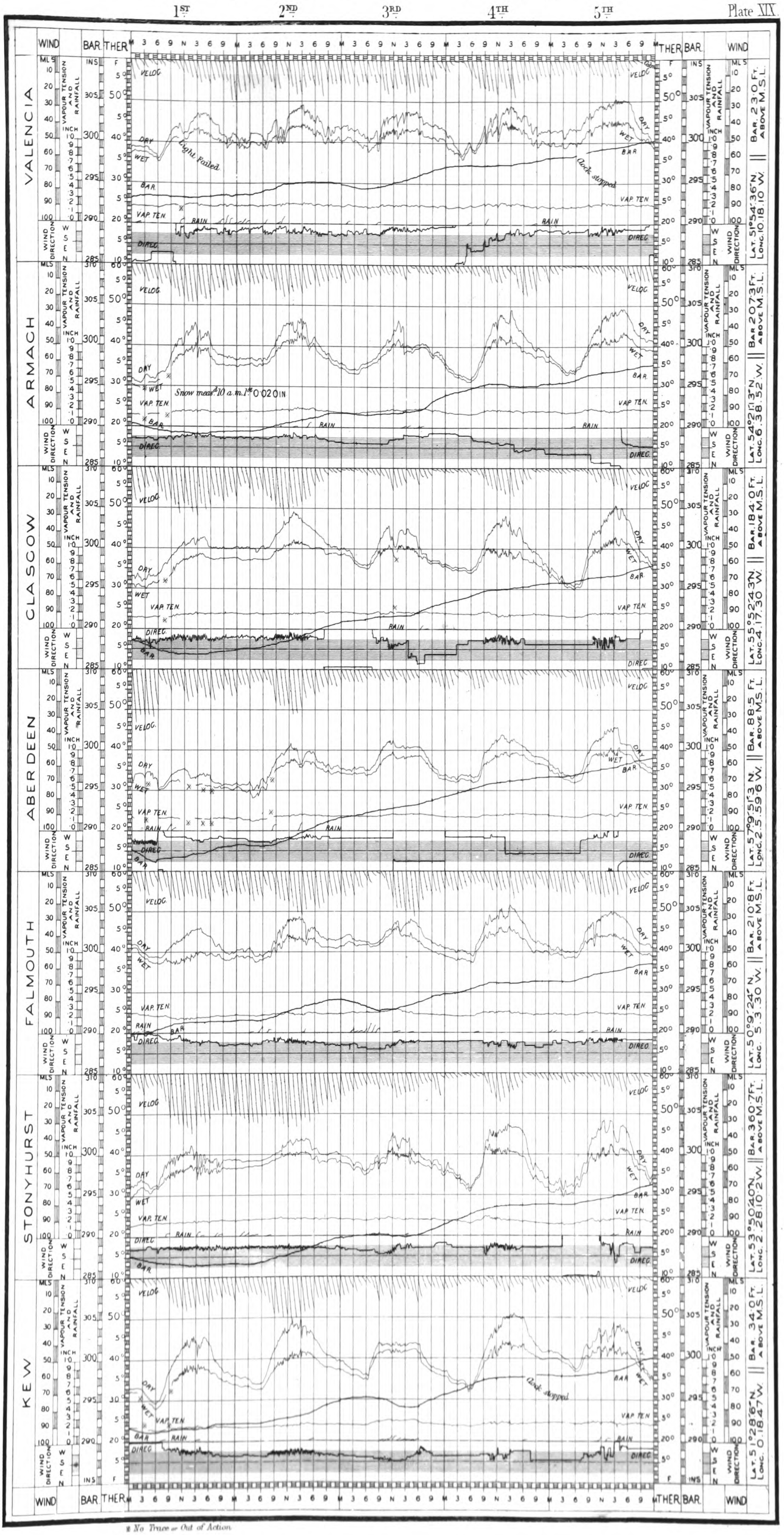
Plate XVIII.



* No Trace or Out of Action.

# APRIL 1878.

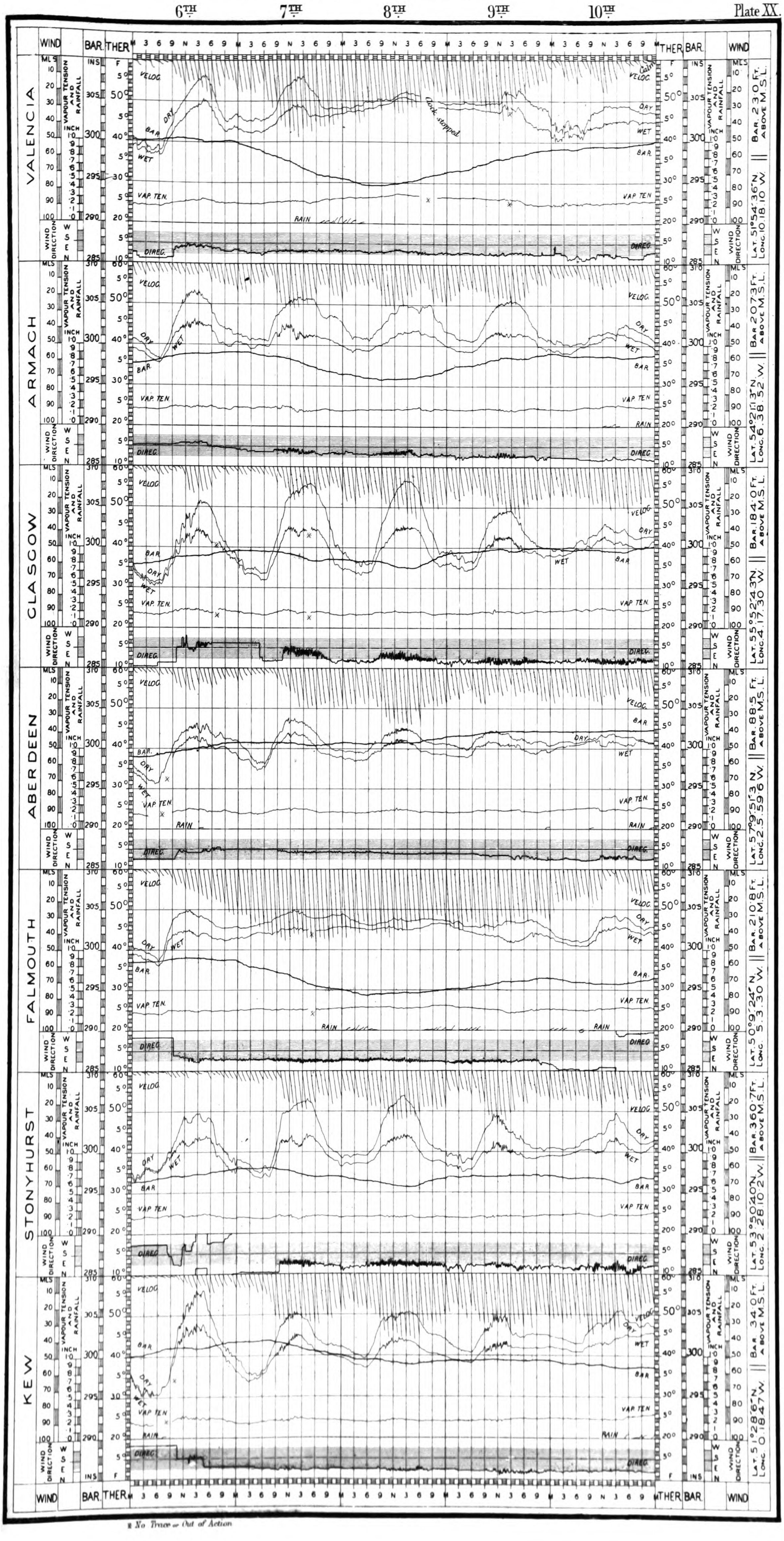
Plate XIX.



* No Trace or Out of Action.

# APRIL — 1878.

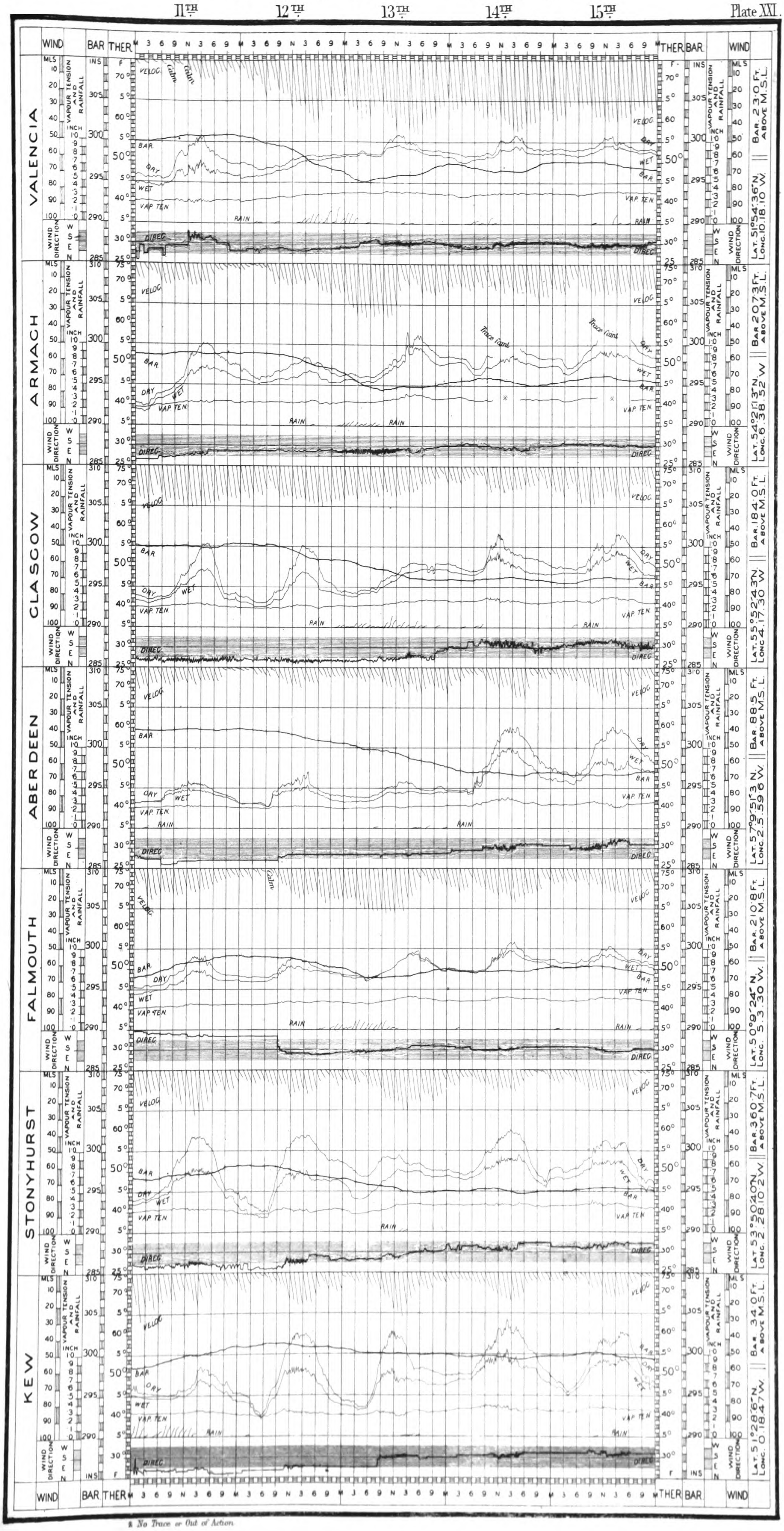
Plate XX.



× No Trace or Out of Action

# APRIL — 1878.

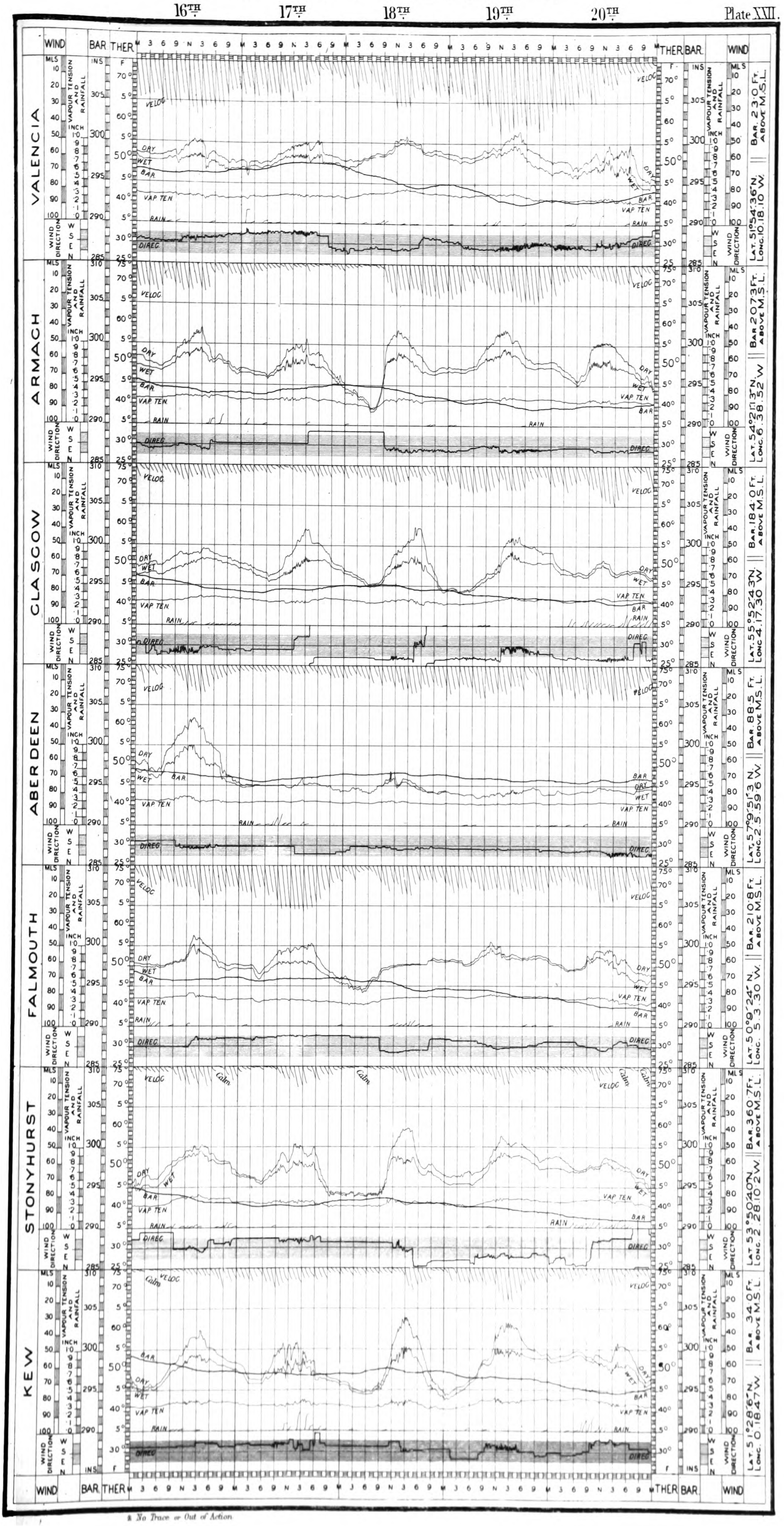
Plate XXI.



* No Trace or Out of Action.

APRIL —— 1878.

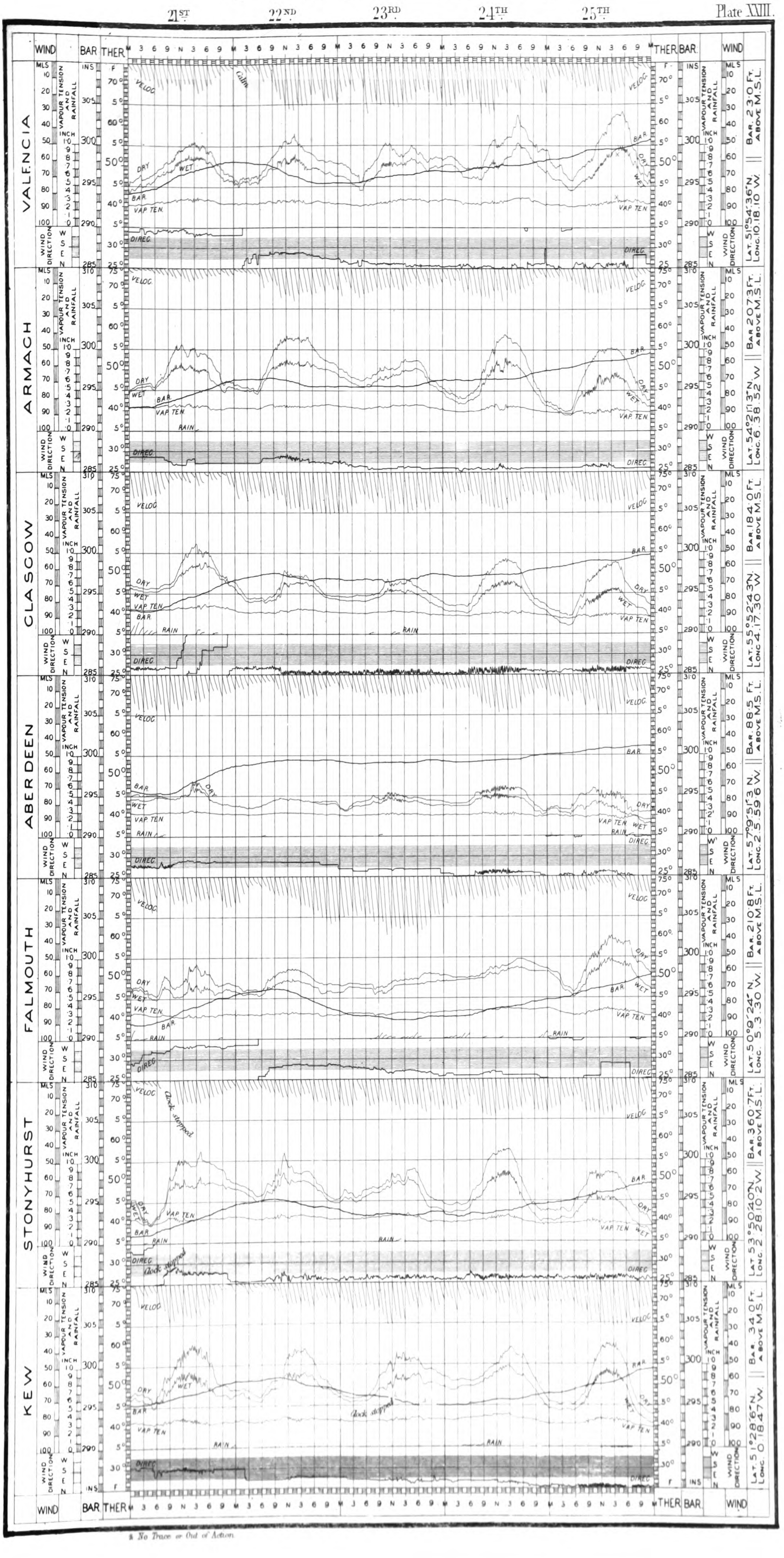
Plate XXII.



* No Trace or Out of Action

A P R I L — 1 8 7 6.

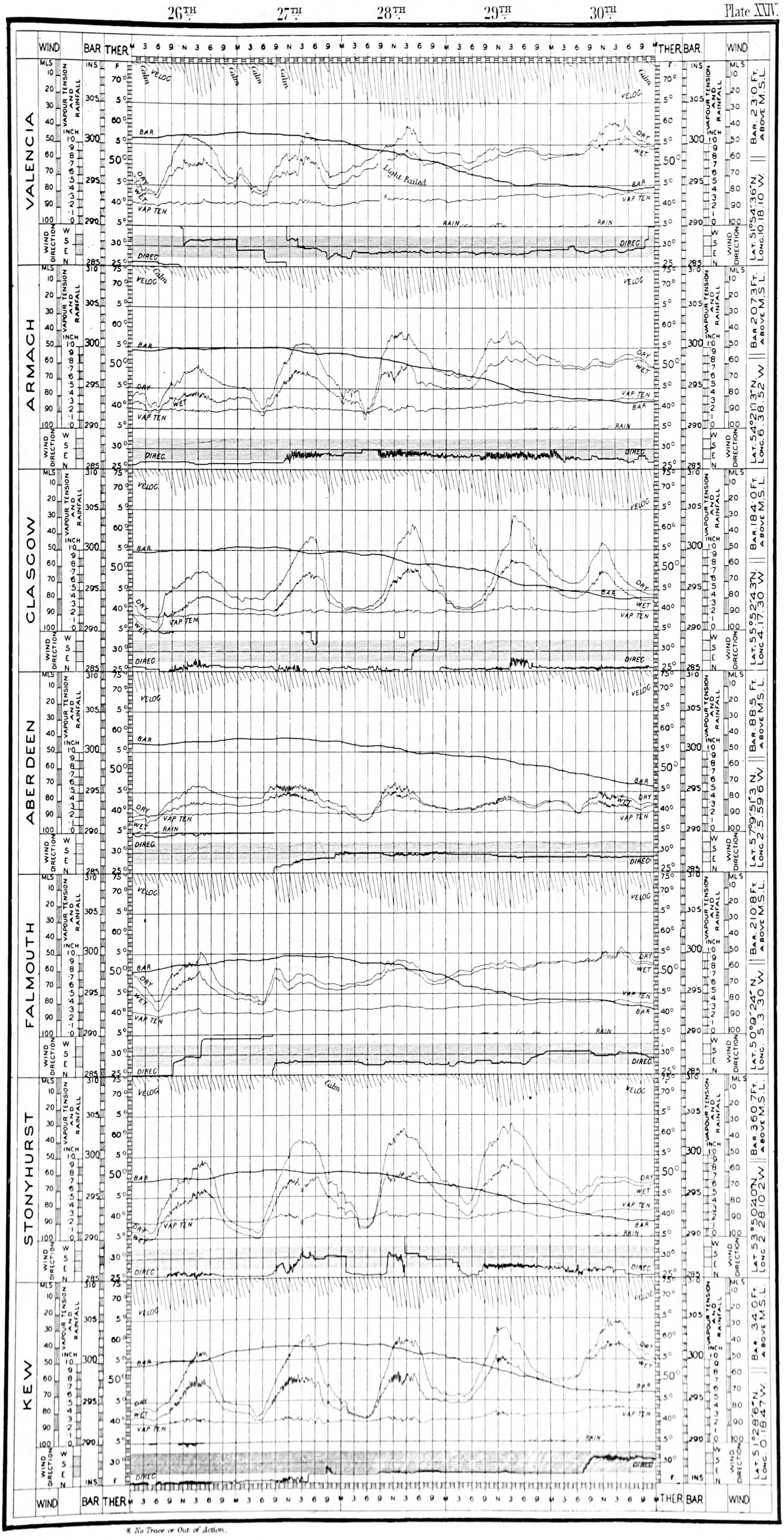
Plate XXIII.



§ No Trace or Out of Action.

# APRIL — 1878.

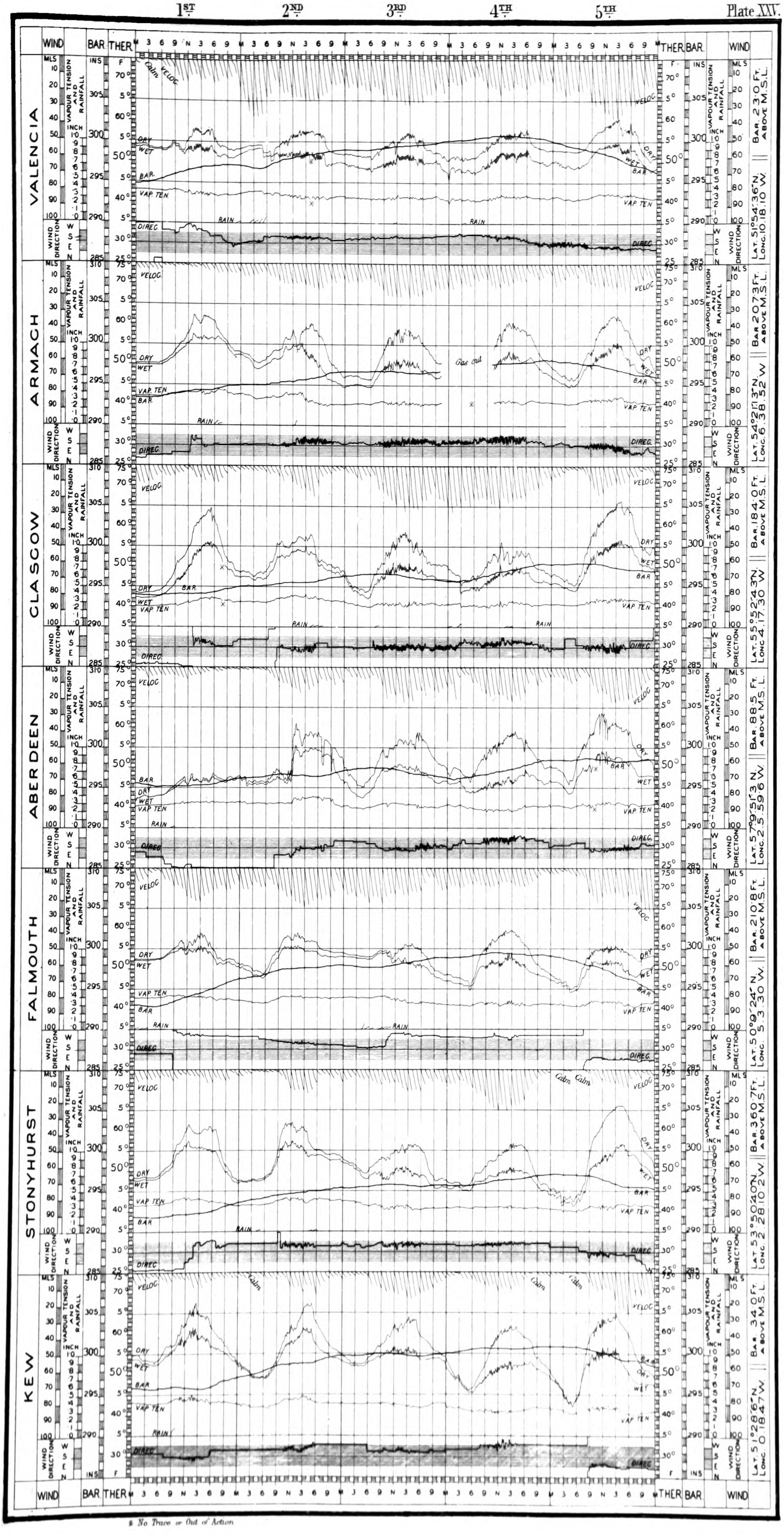
Plate XXIV.



* No Trace or Out of Action.

# MAY —— 1878.

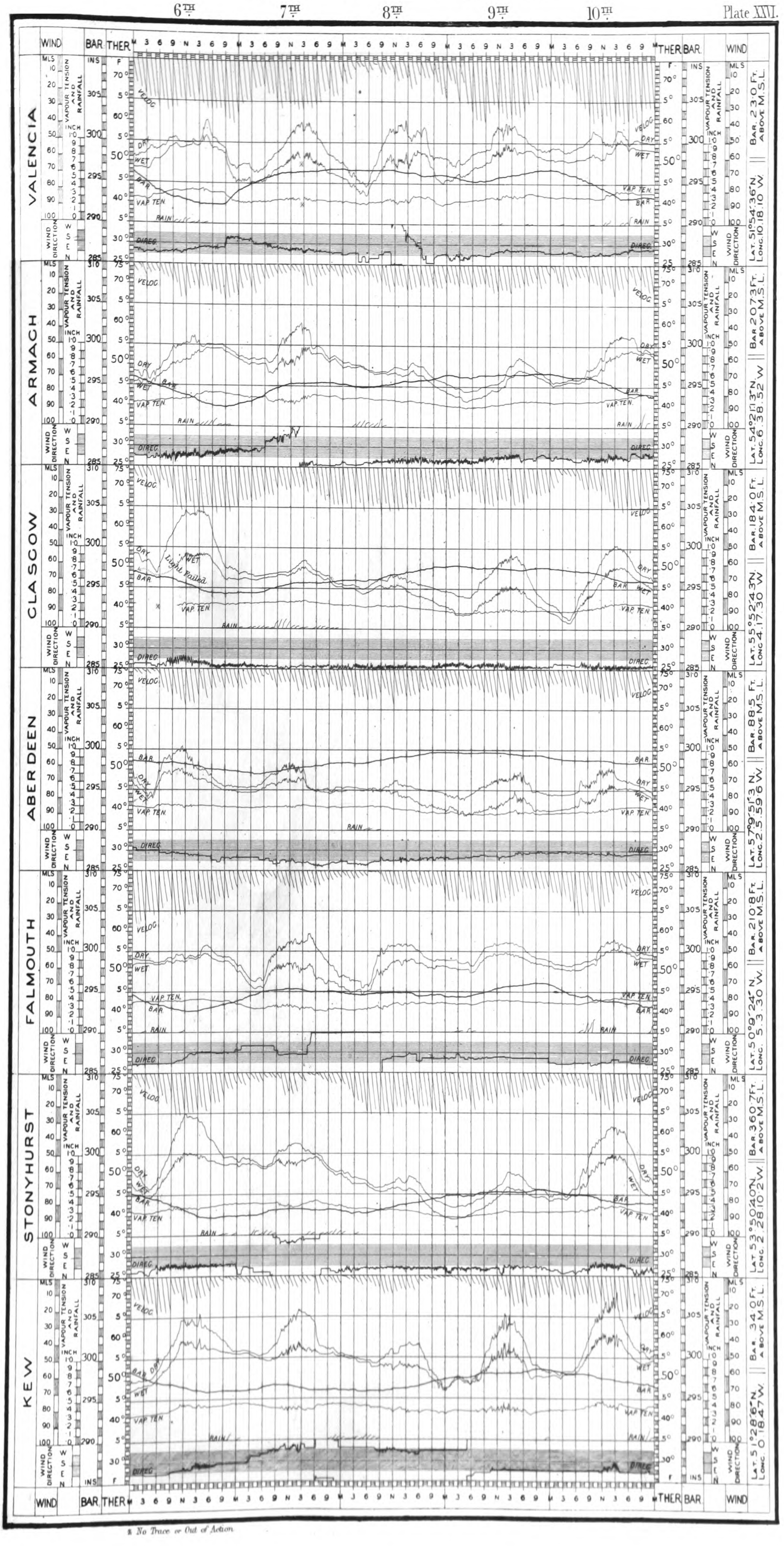
Plate XXV.



* No Trace or Out of Action

## MAY — 1878.

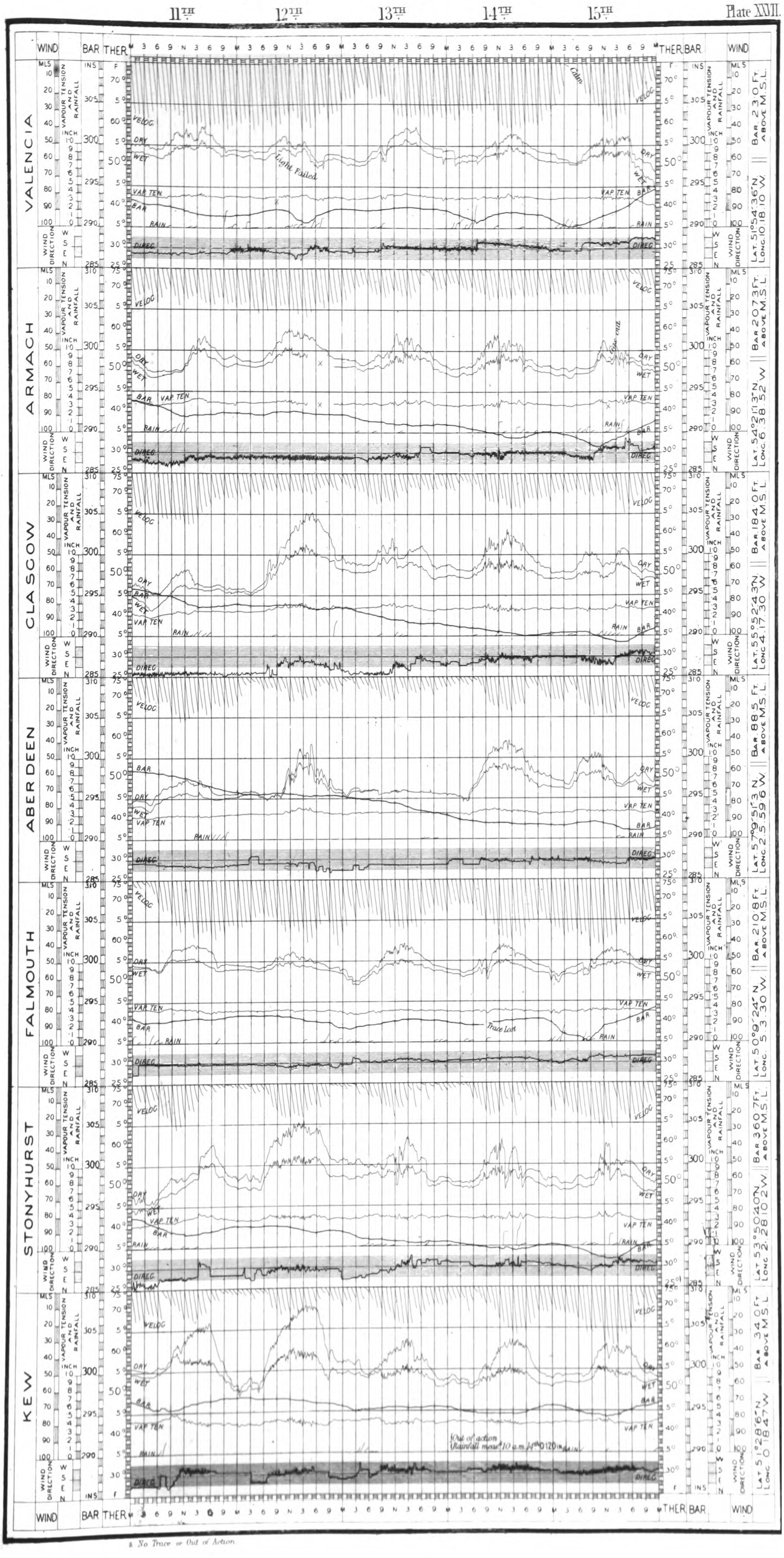
Plate XXVI.



* No Trace or Out of Action

MAY — 1878

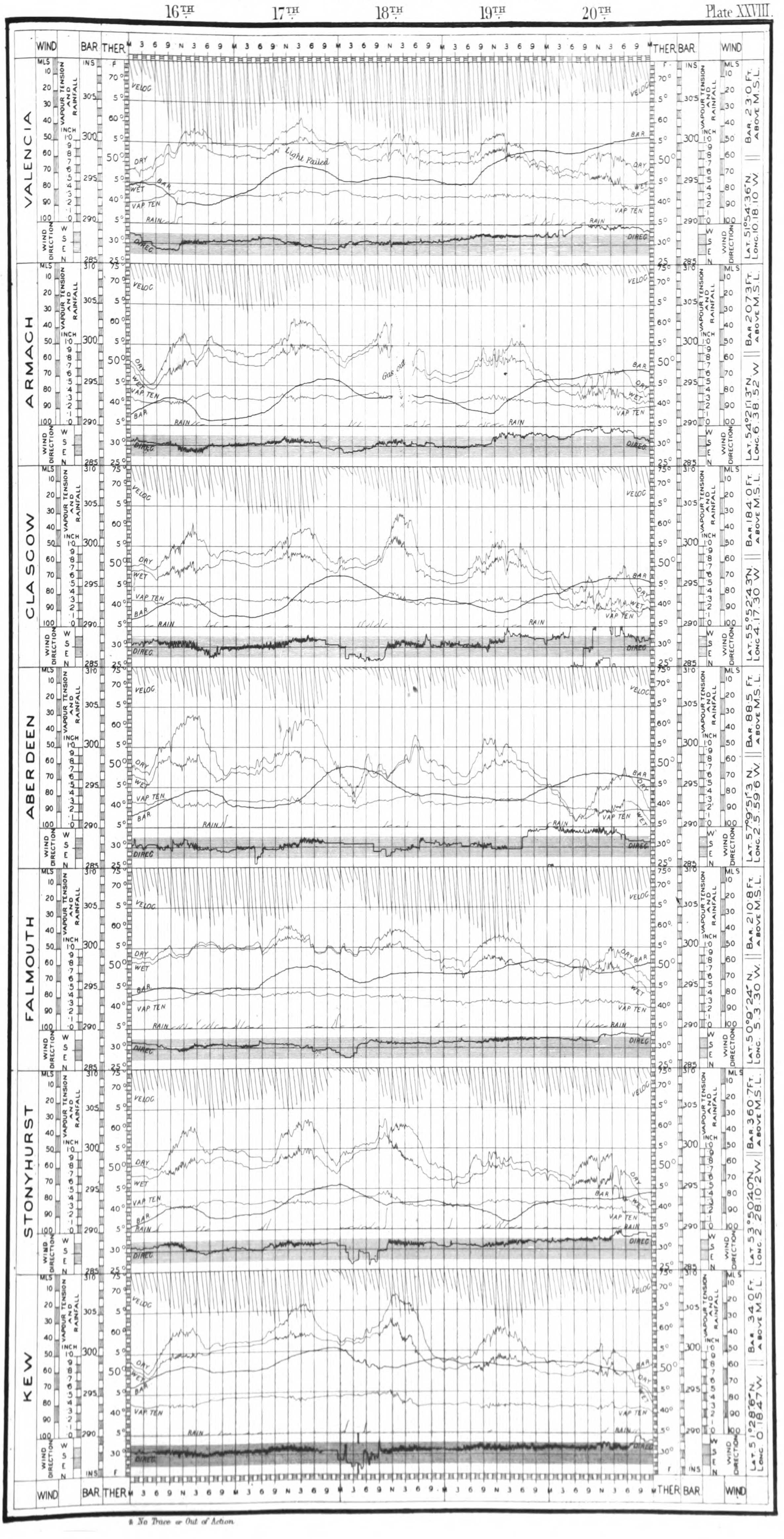
Plate XXVII.



✕ No Trace or Out of Action

# MAY — 1878.

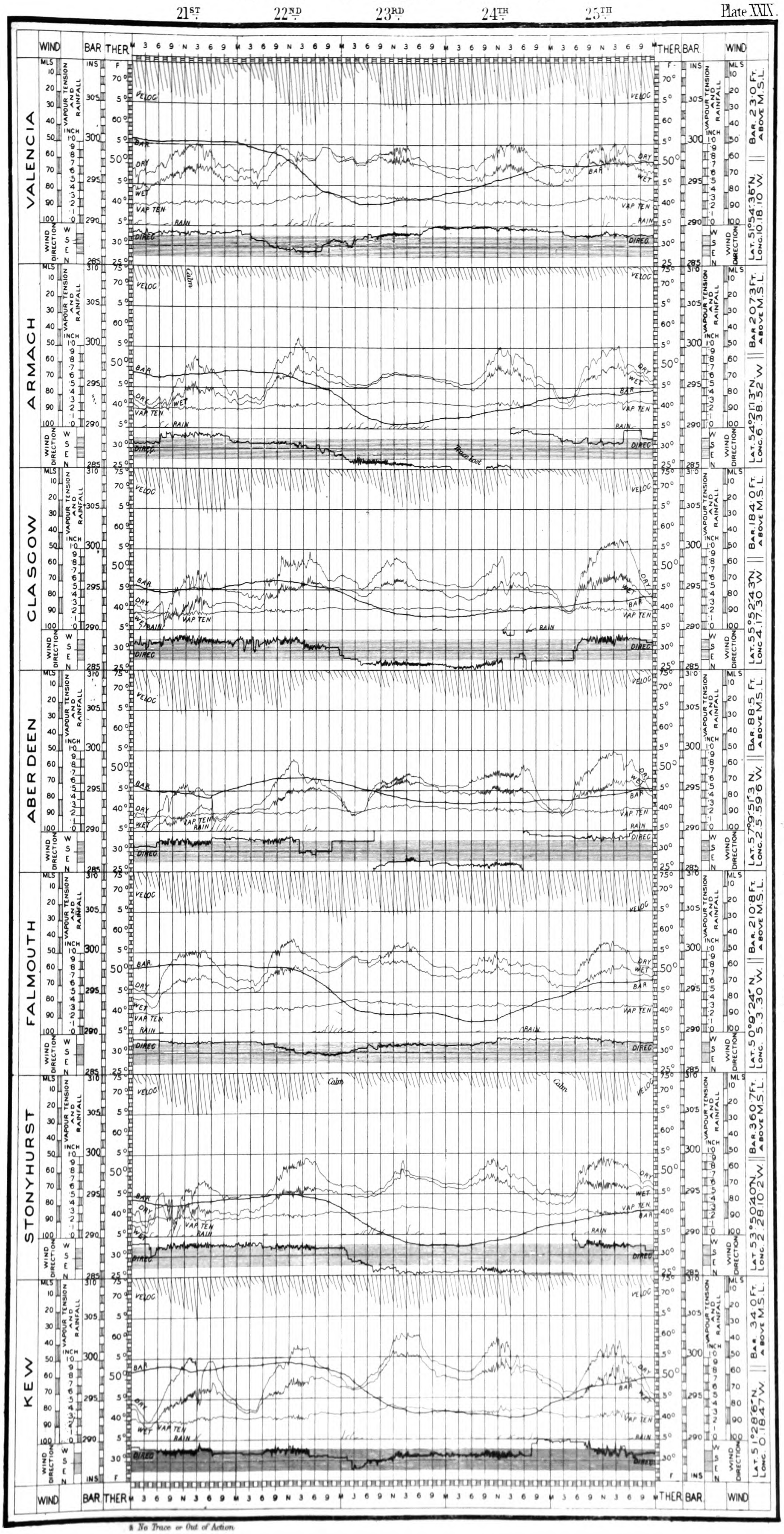
Plate XXVIII.



* No Trace or Out of Action

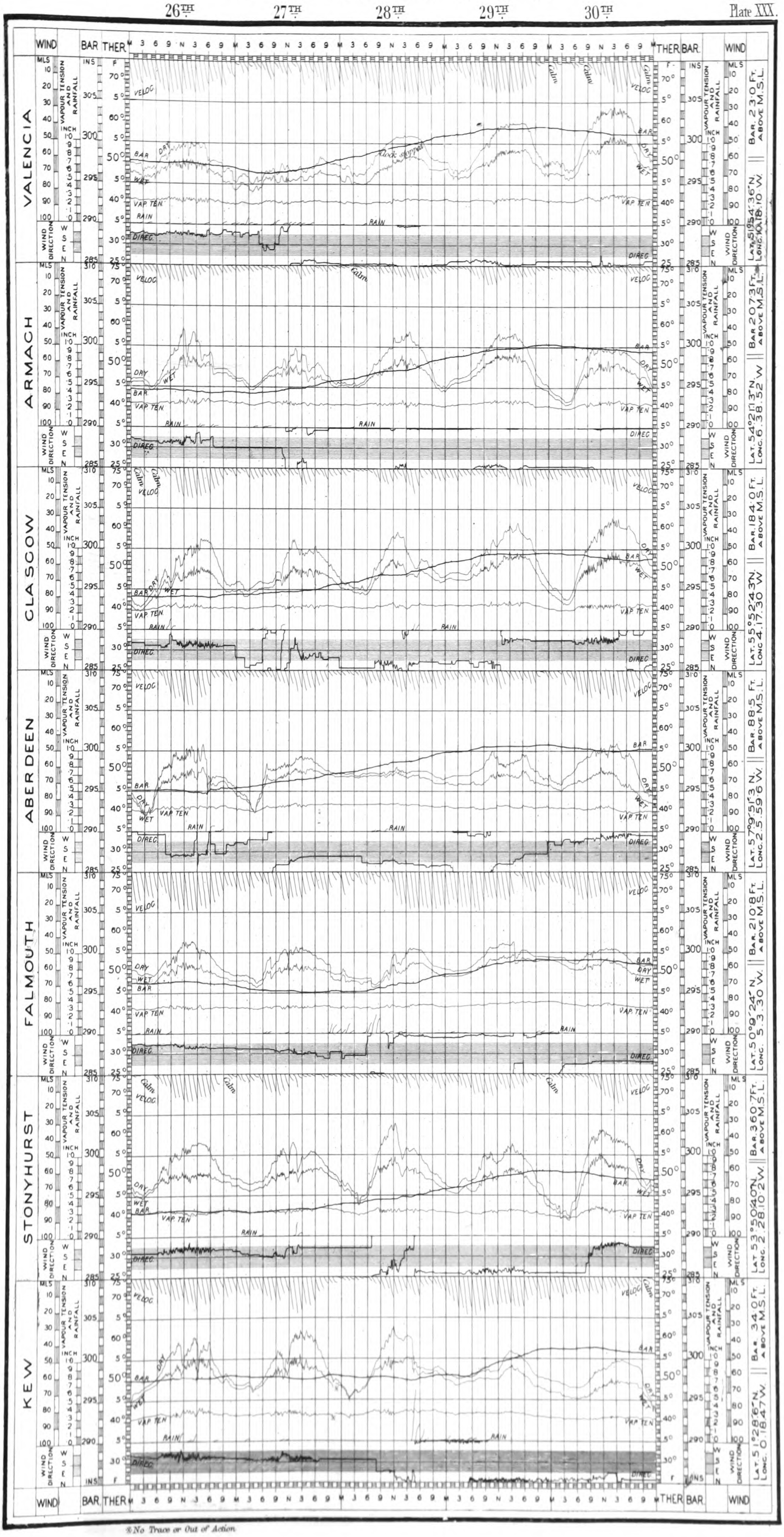
MAY — 1878.

21st. 22nd. 23rd. 24th. 25th. Plate XXIX.



* No Trace or Out of Action

# MAY — 1878.



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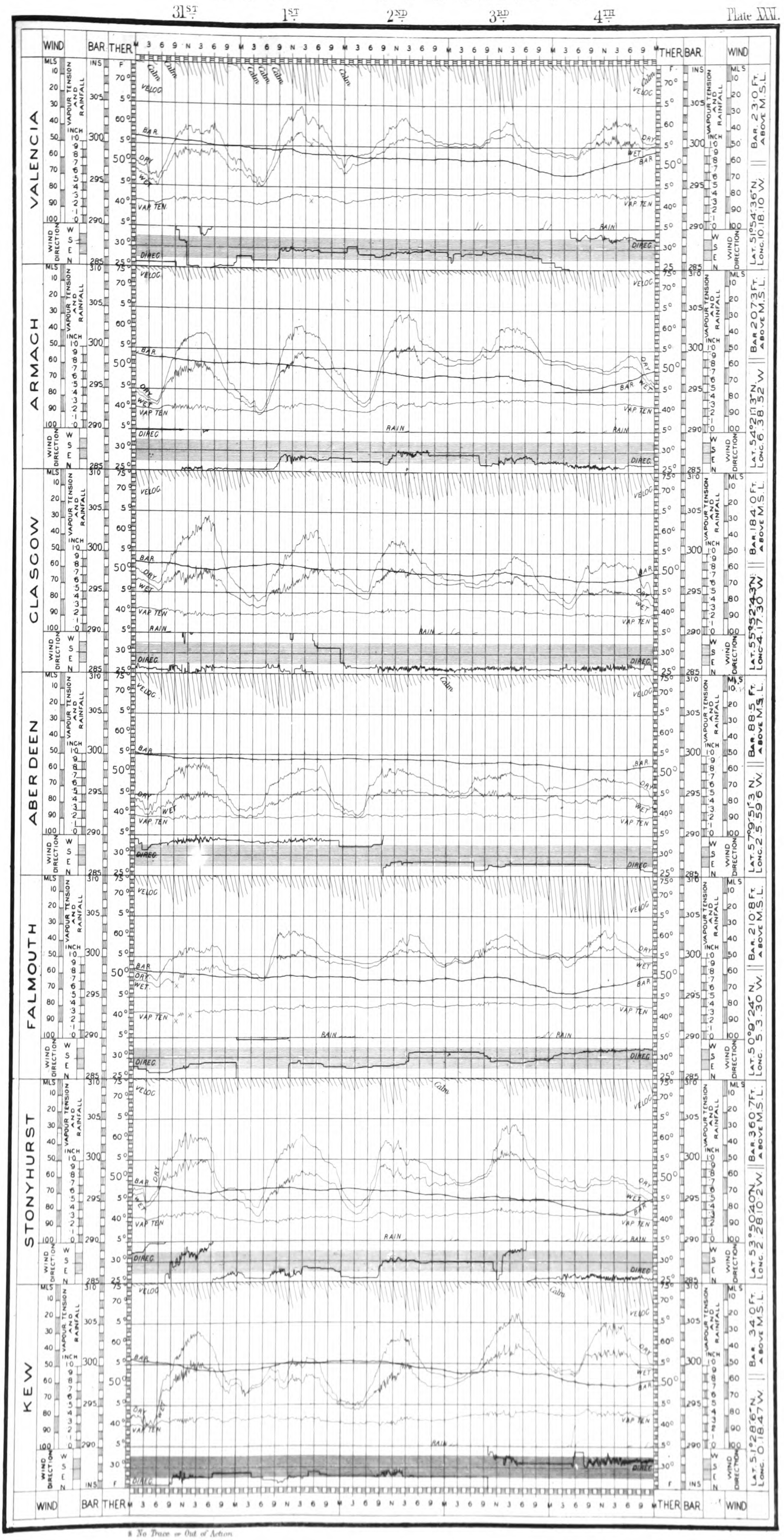
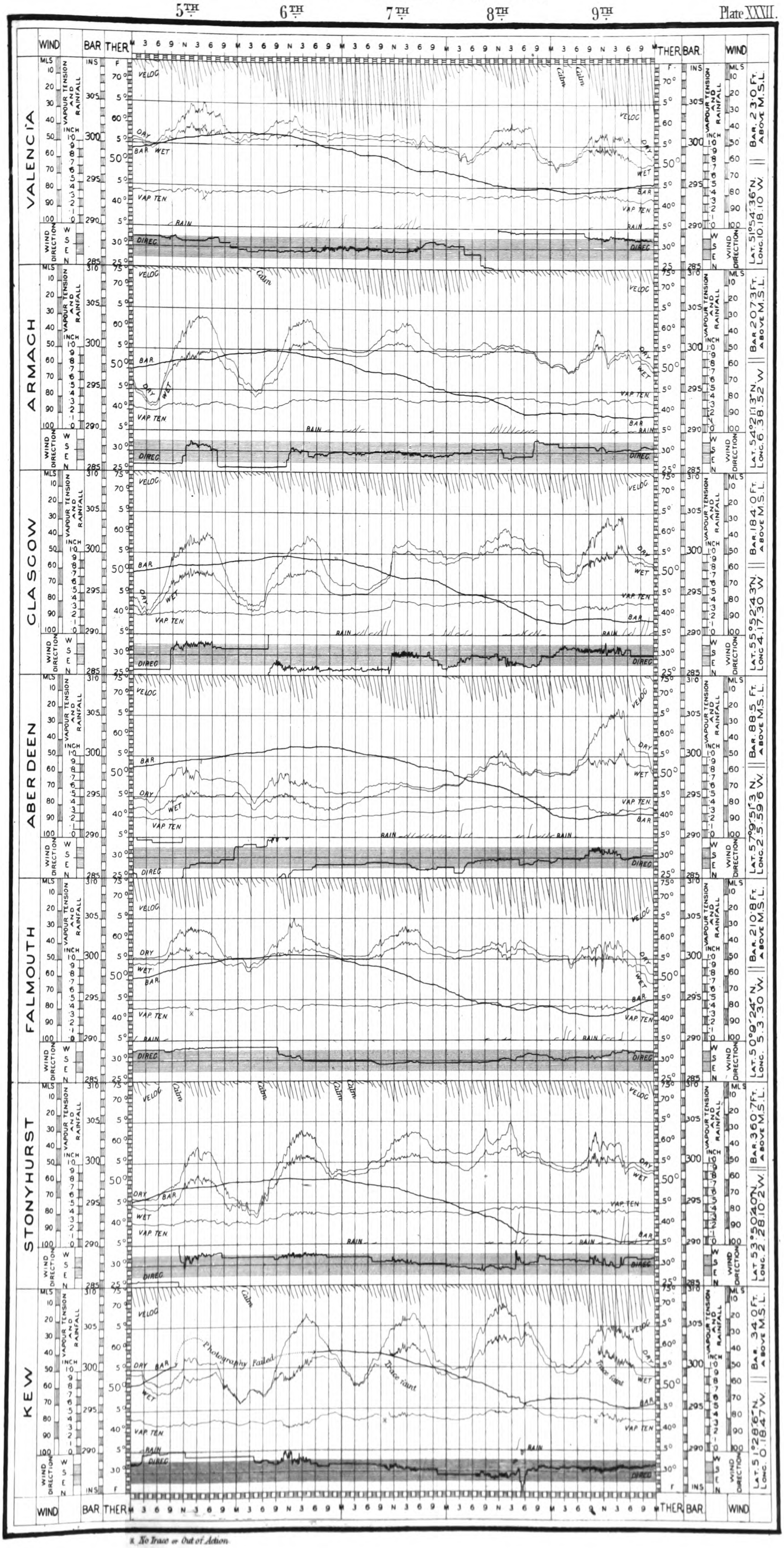
# MAY & JUNE — 1878.



x No Trace or Out of Action.

JUNE — 1878.

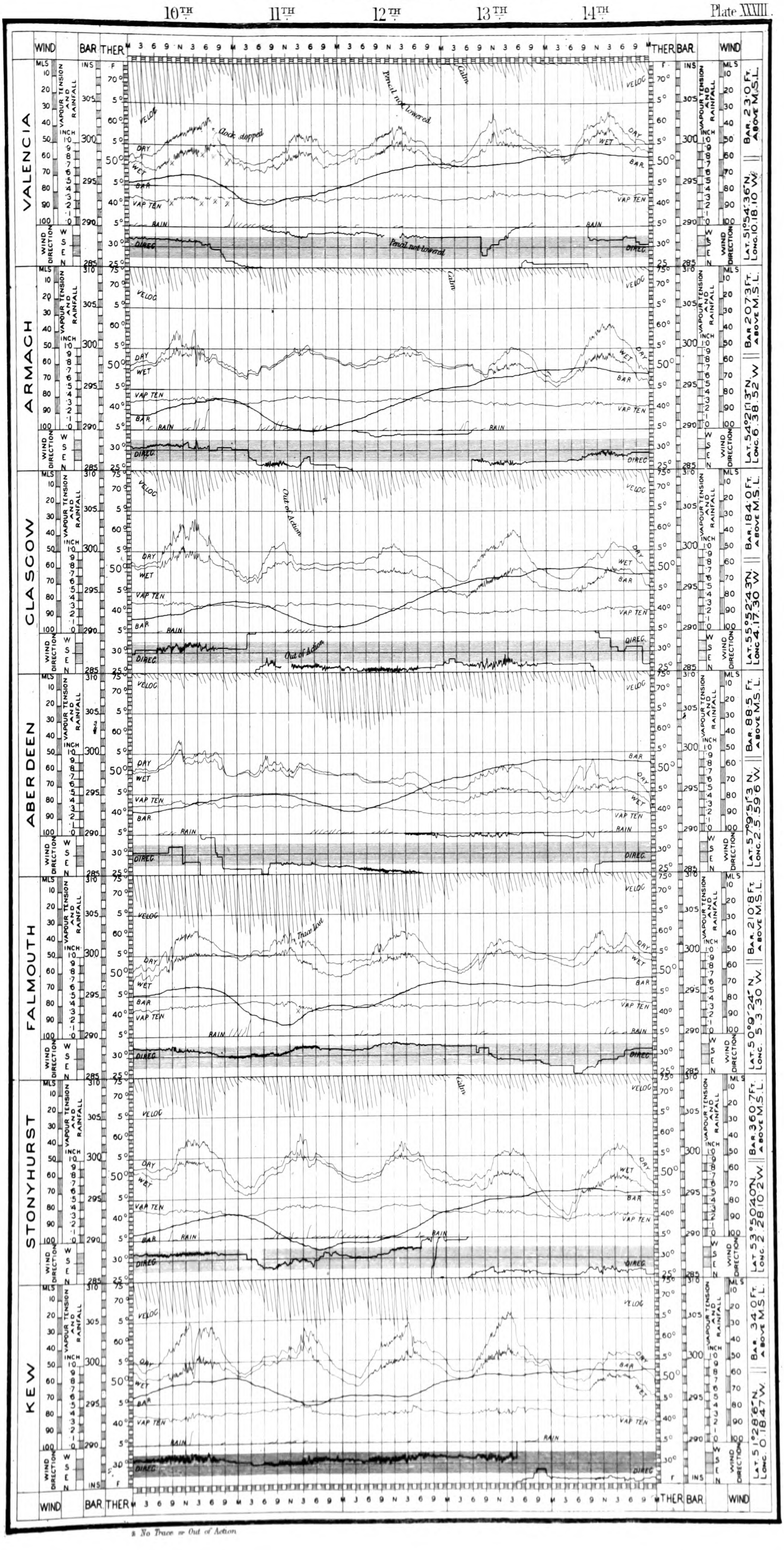
Plate XXVII.



x No Trace or Out of Action.

# JUNE — 1878.

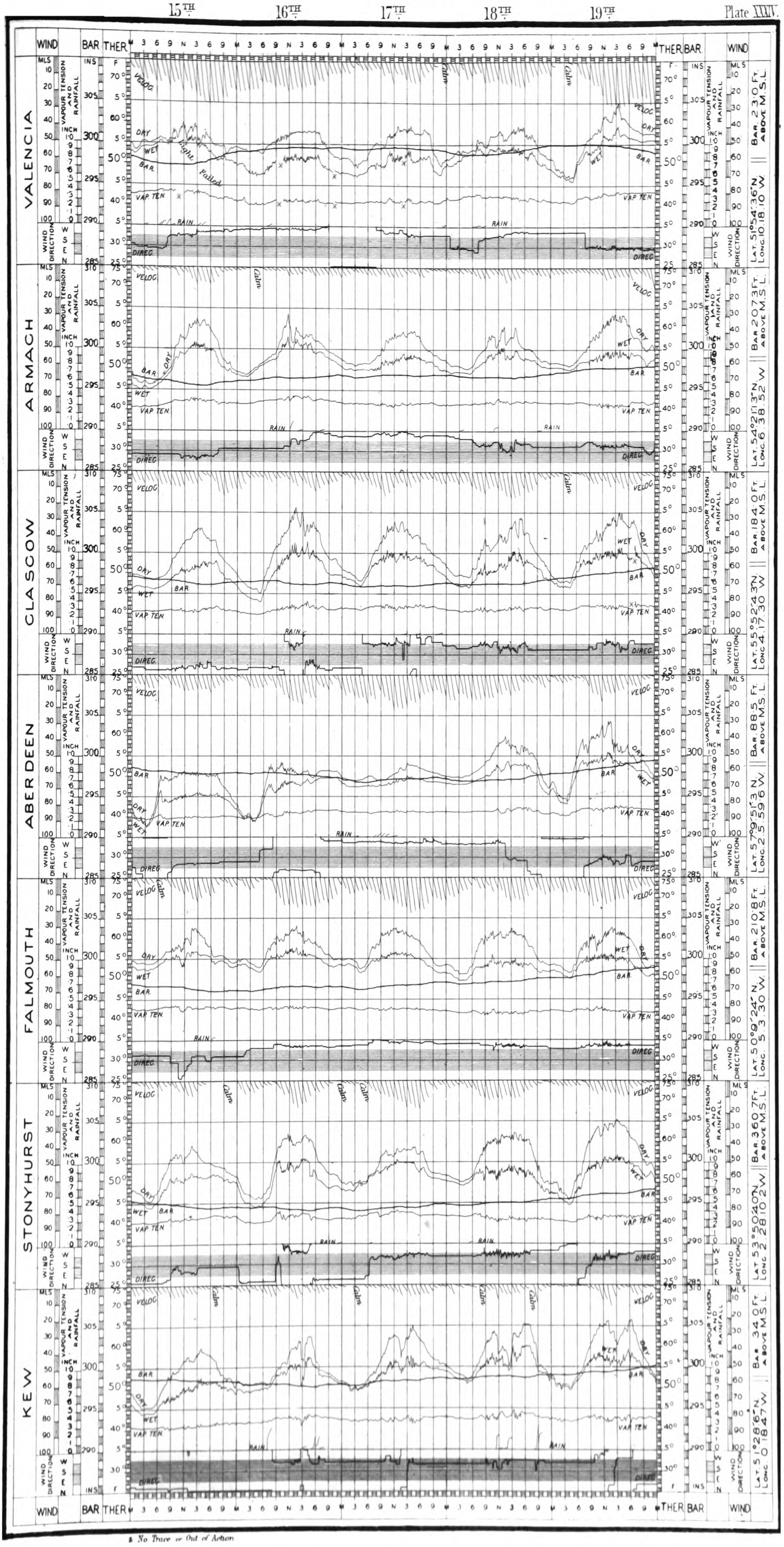
Plate XXVIII.



* No Trace or Out of Action

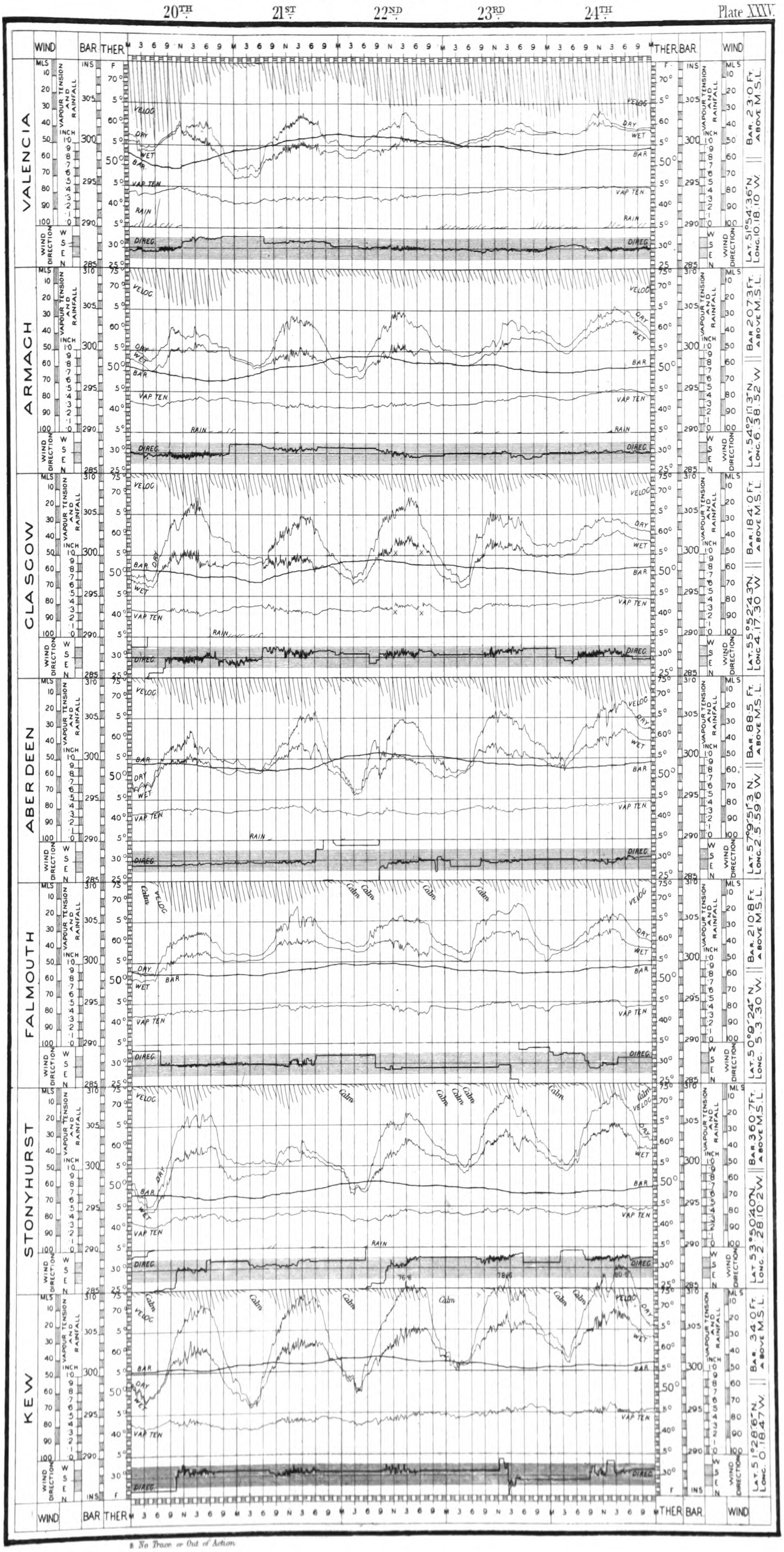
JUNE — 1878.

Plate XXXIV.



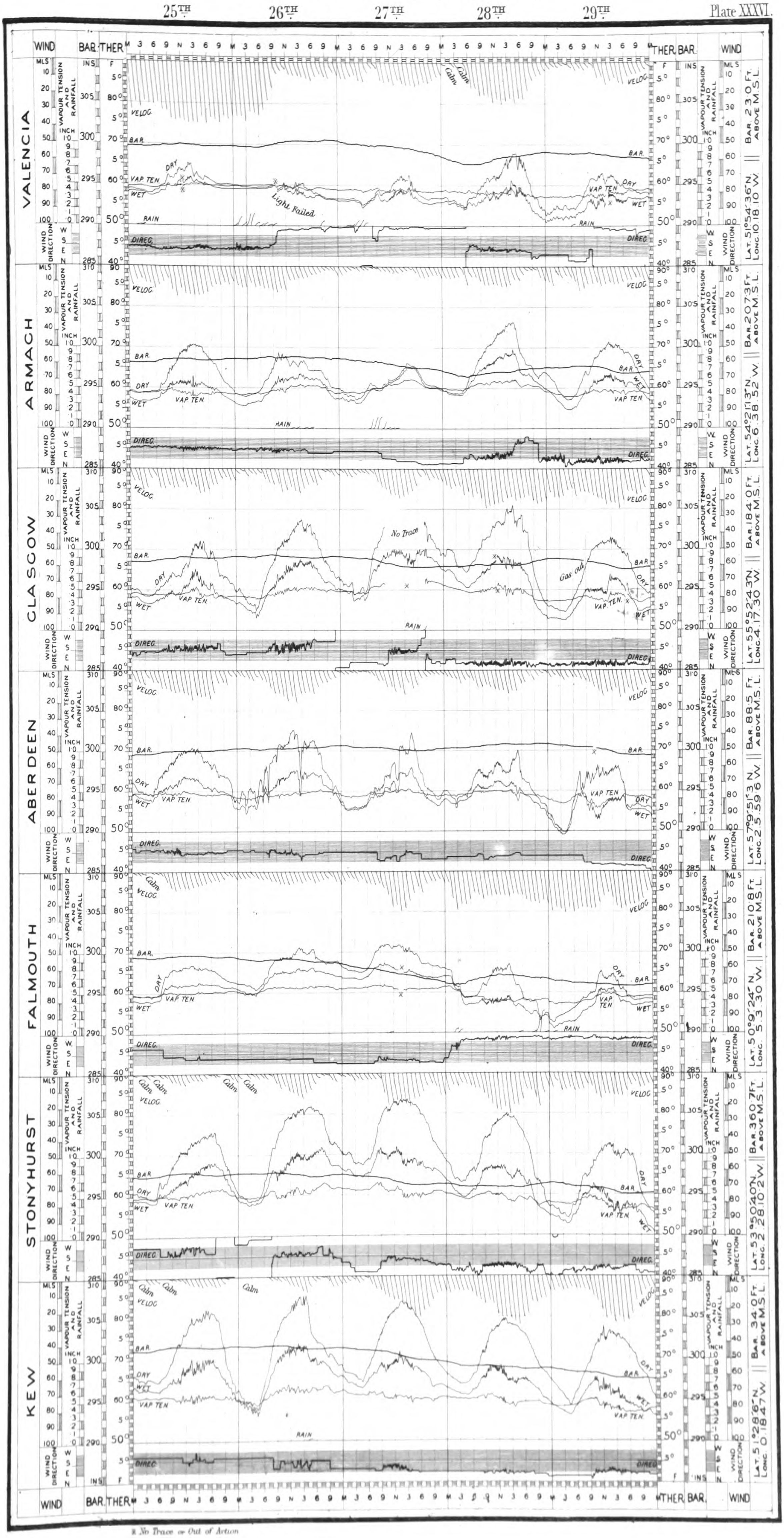
ꟷ No Trace or Out of Action

Plate XXXV.



§ No Trace or Out of Action.

# J U N E — 1 8 7 8.



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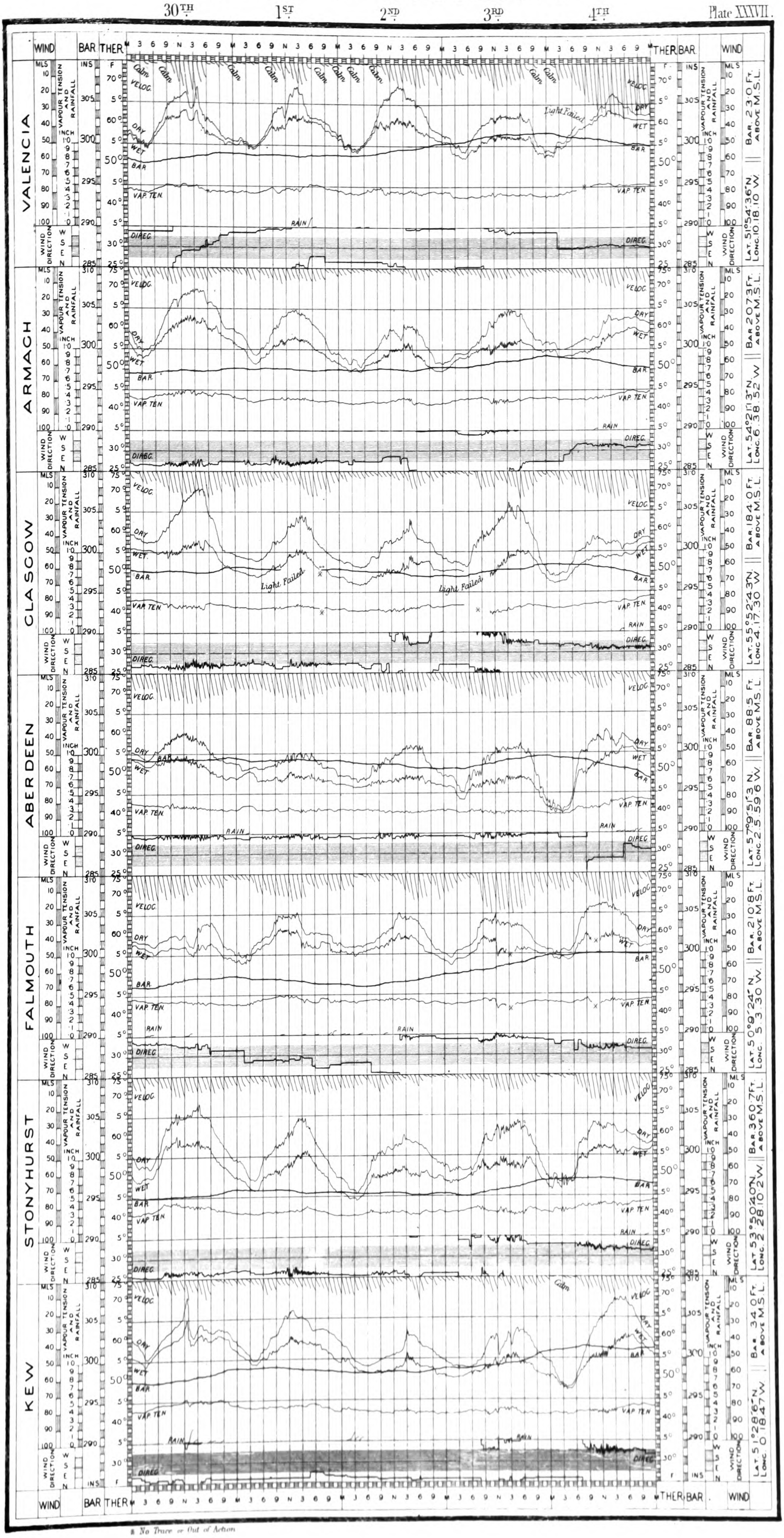
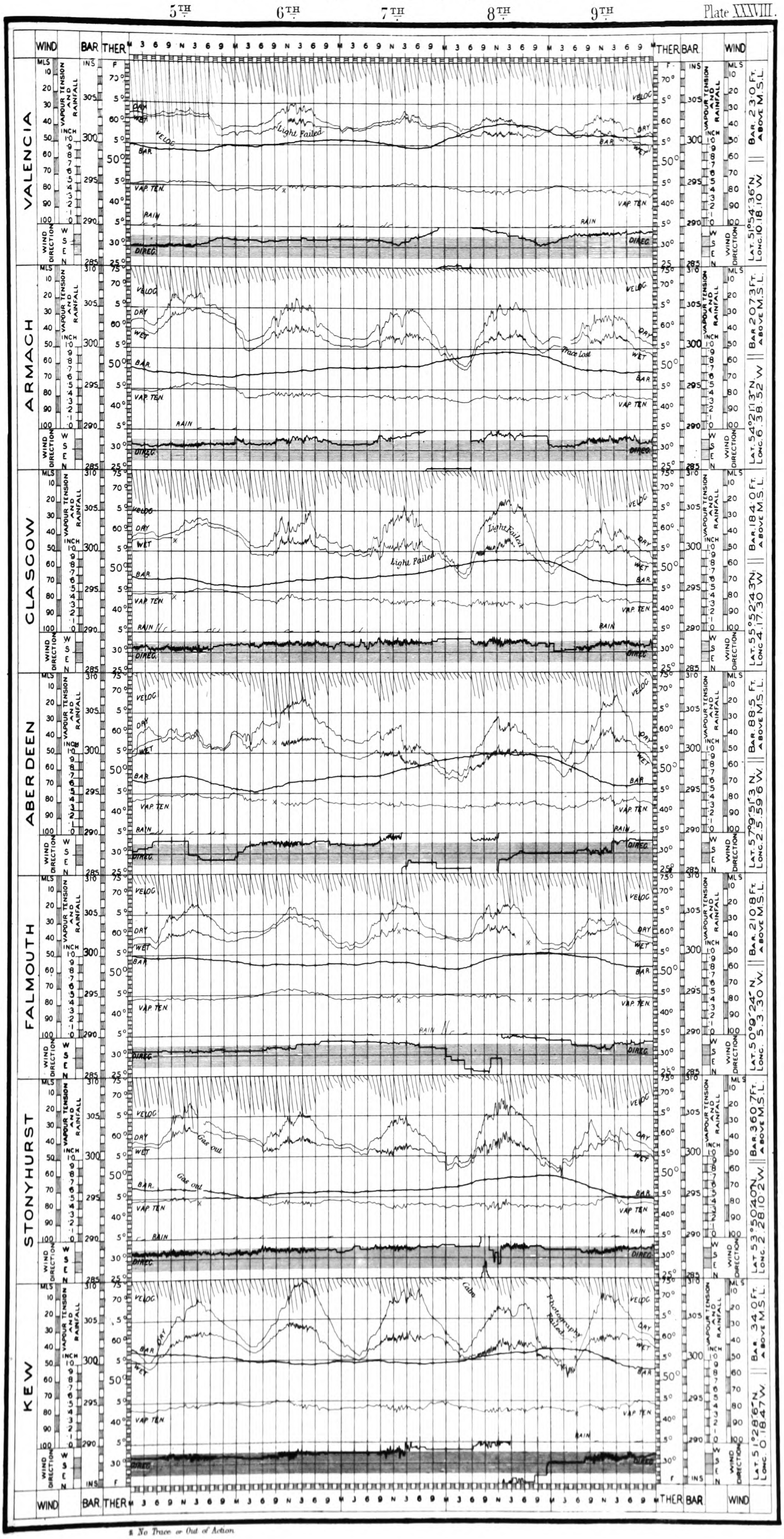


× No Trace or Out of Action

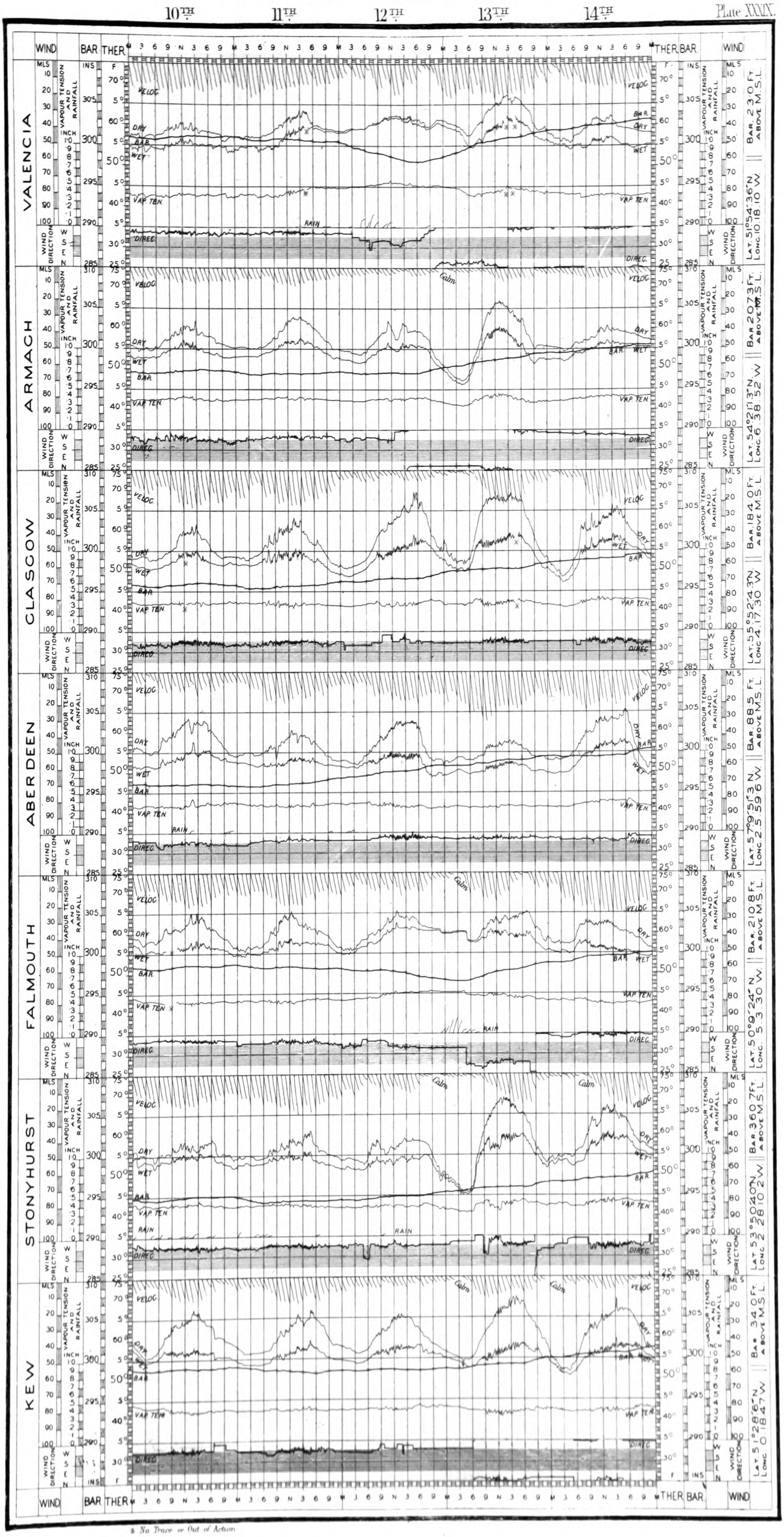
Plate XXXVIII.



* No Trace or Out of Action

# JULY 1878.

Plate XXXIX.



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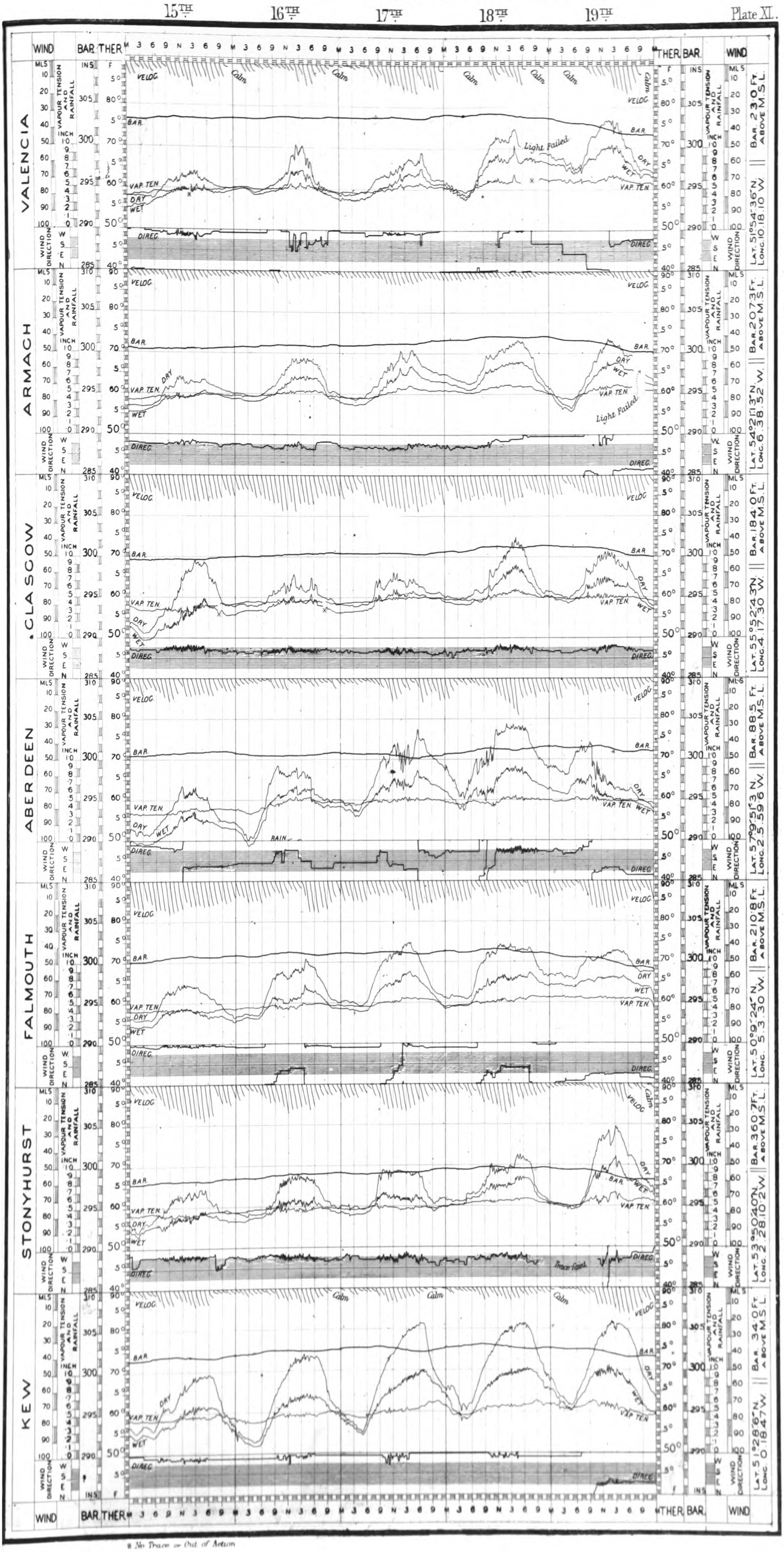
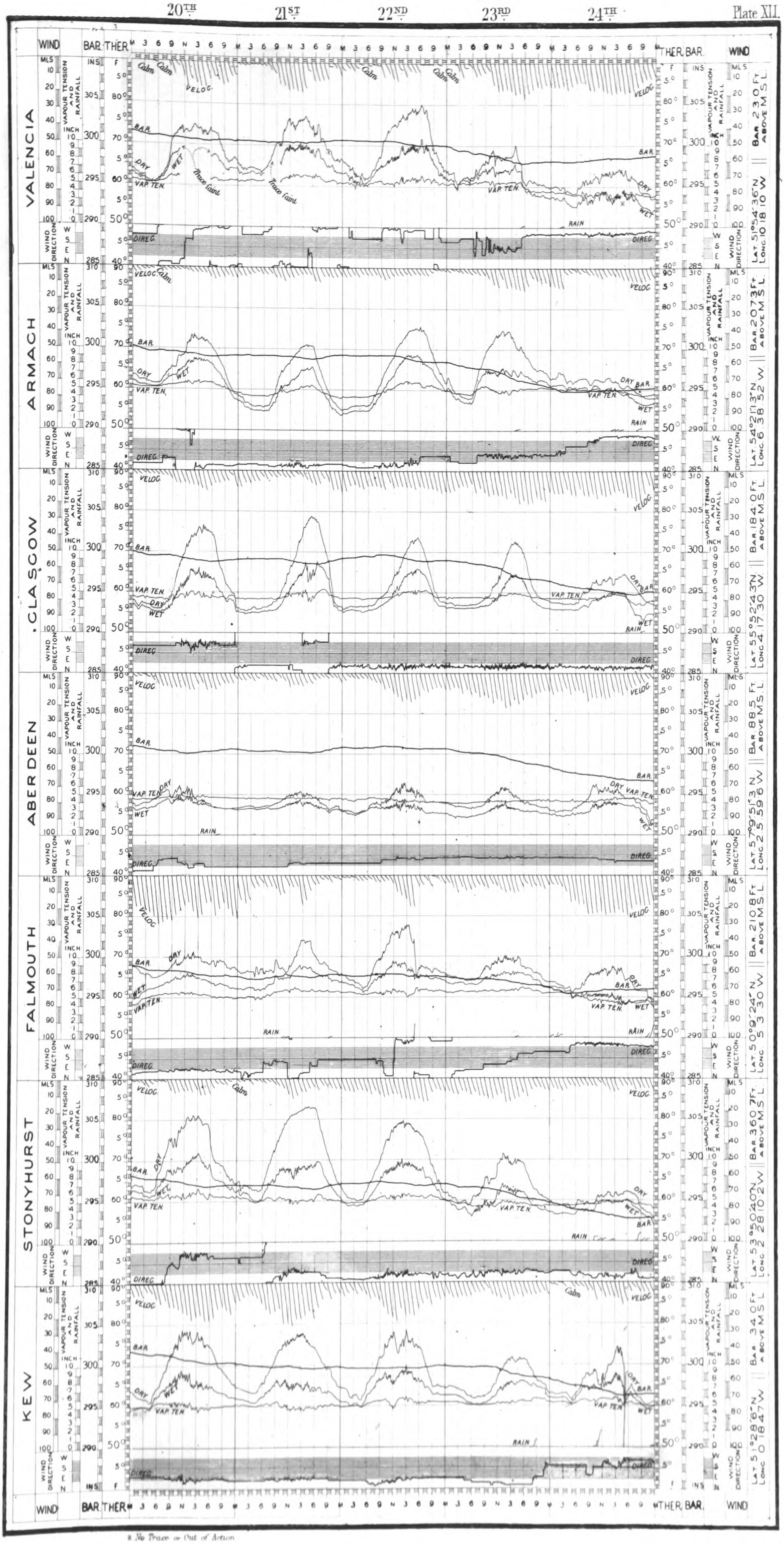


* No Trace or Out of Action

# JULY — 1878

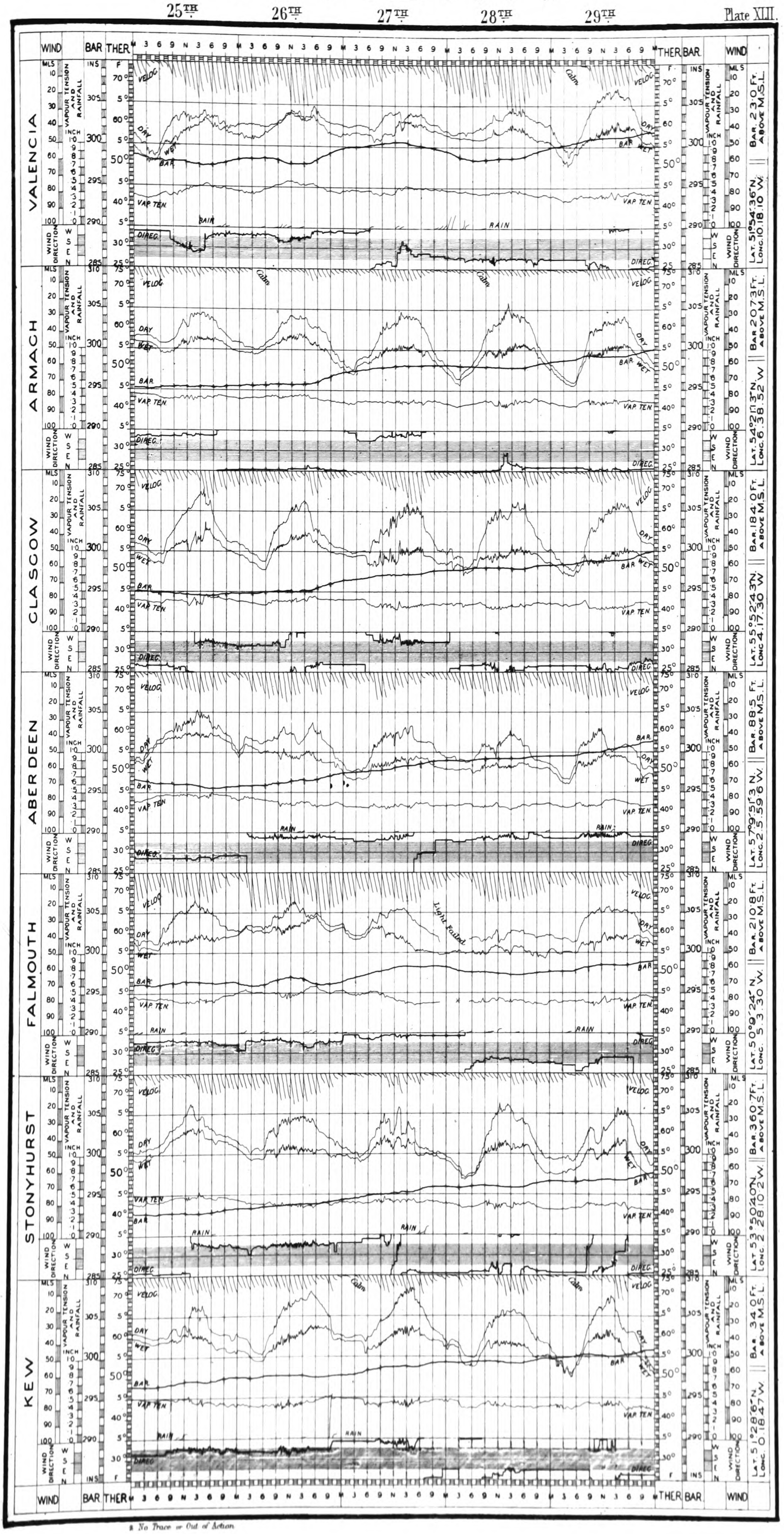
Plate XII.



* No Trace or Out of Action

## JULY — 1878.

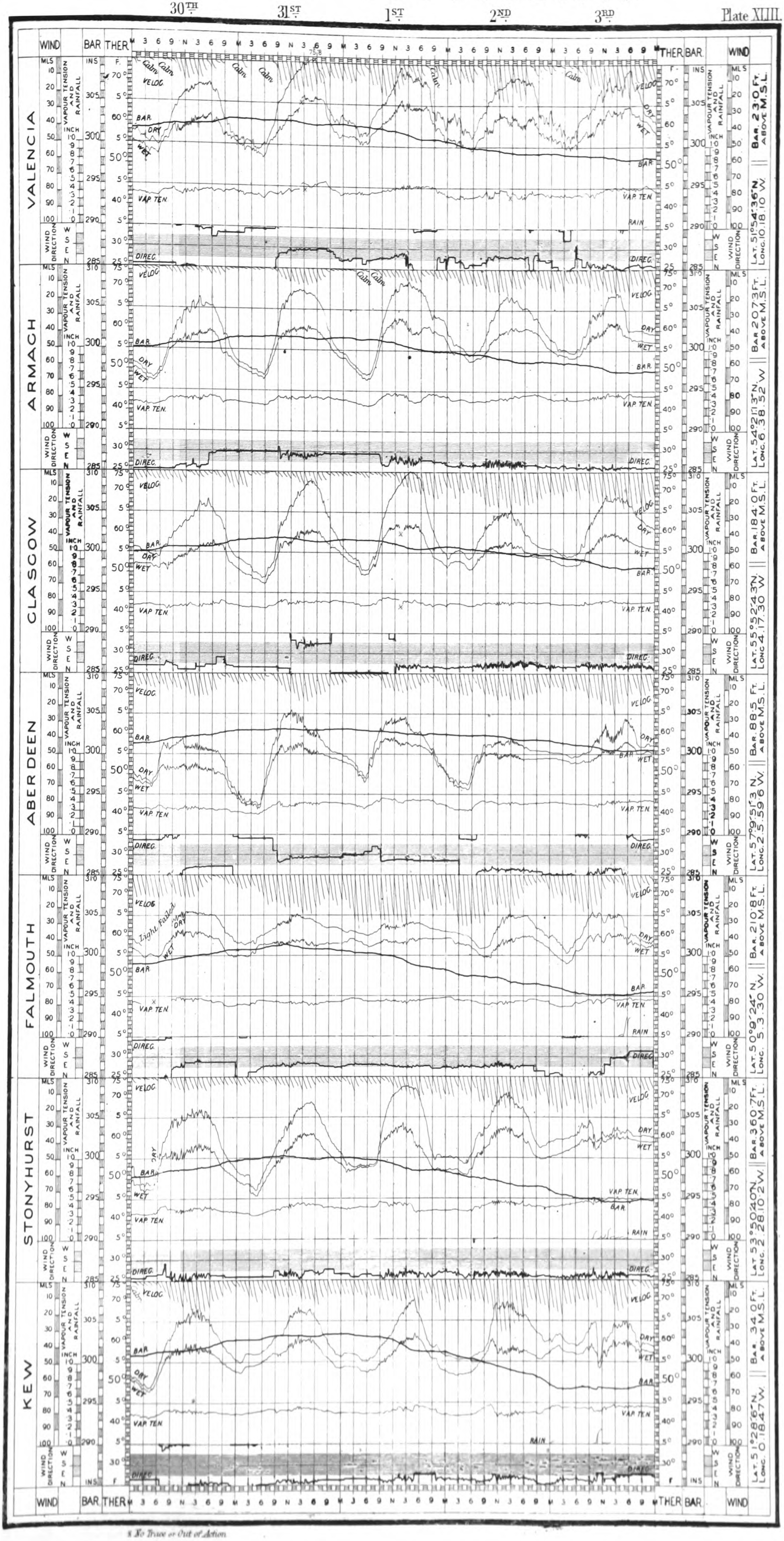
Plate XLII.



* No Trace or Out of Action

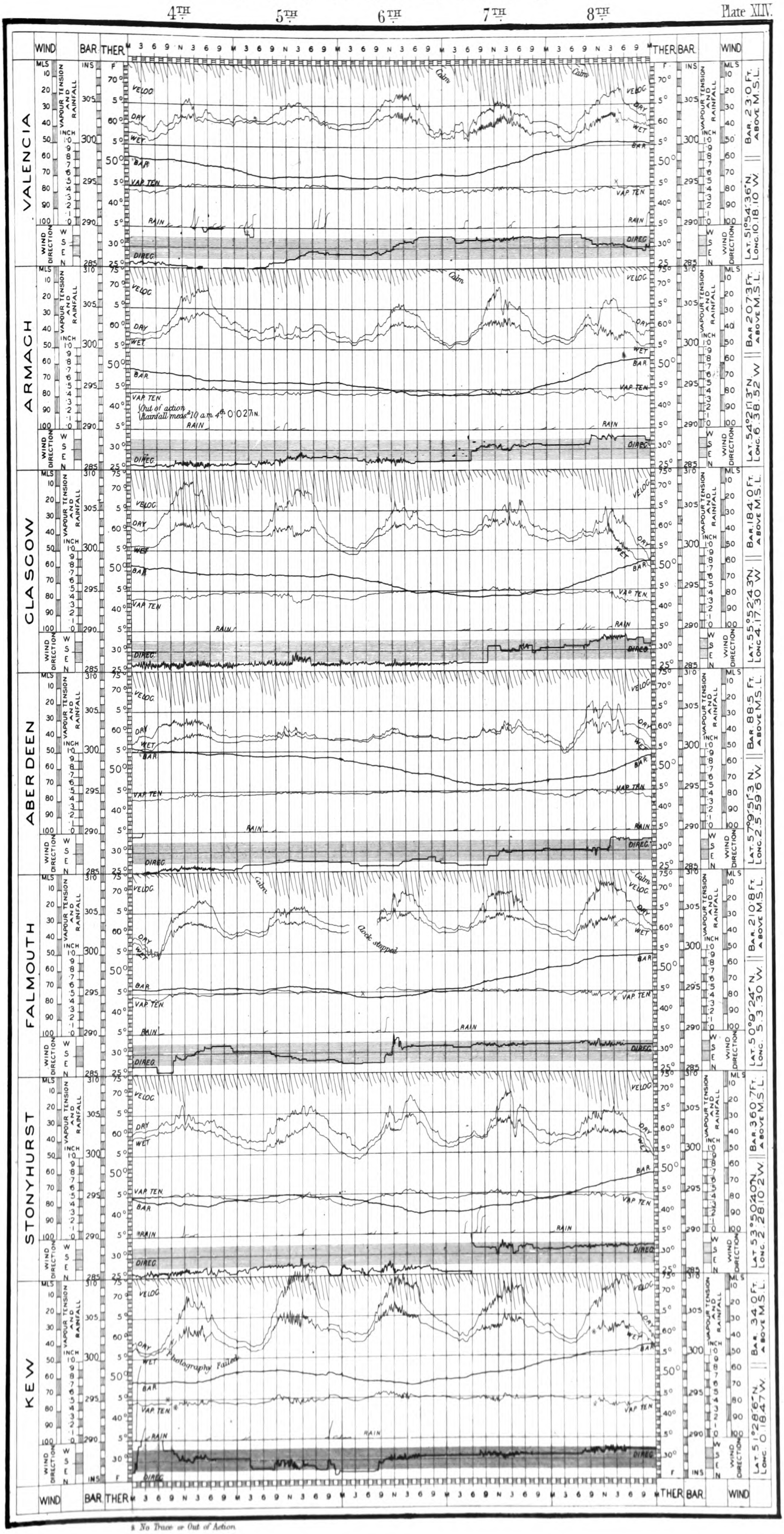
JULY & AUGUST — 1878.

Plate XLIII.



§ No Trace or Out of Action

# AUGUST — 1878.



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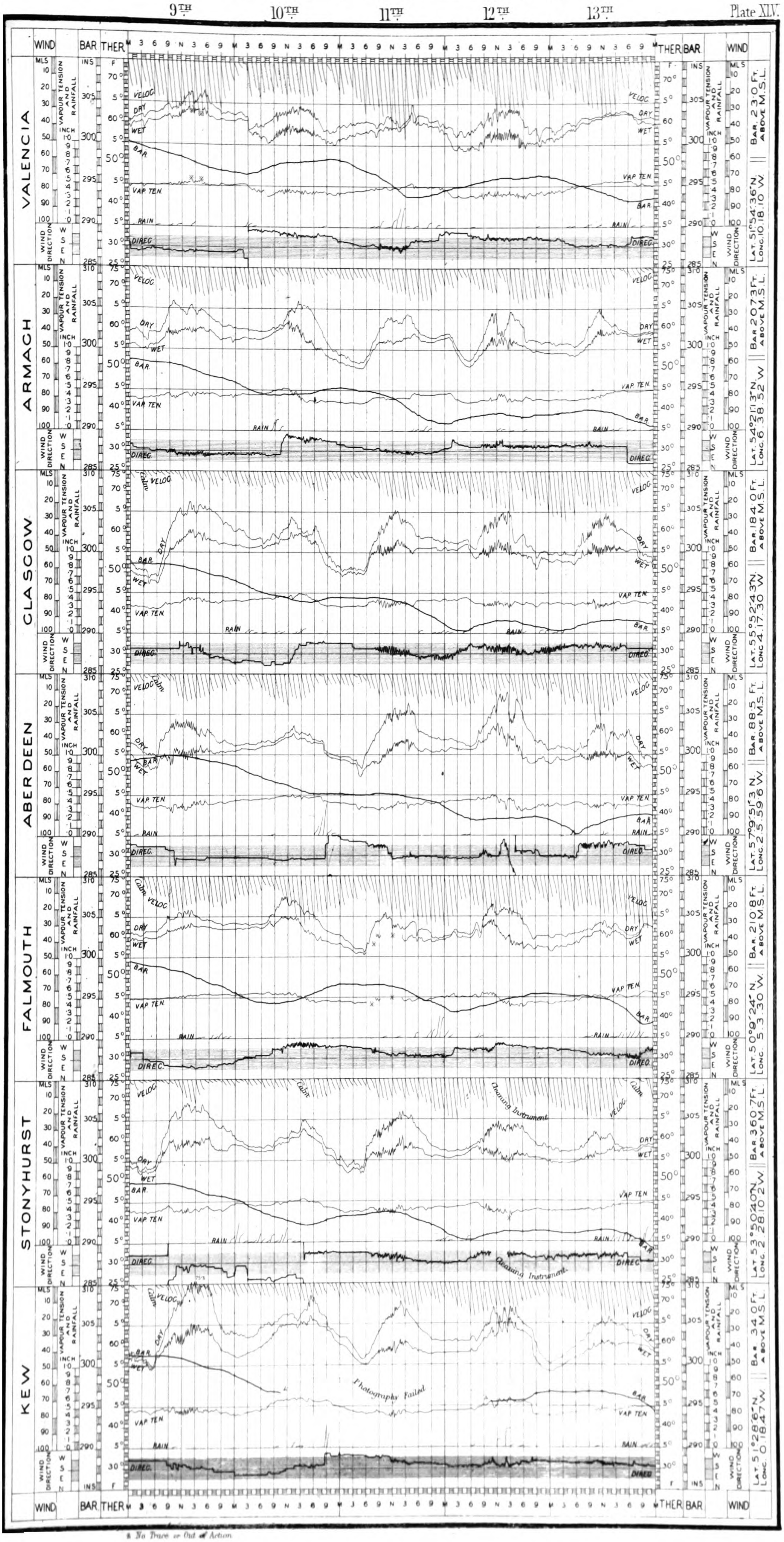
AUGUST — 1878.

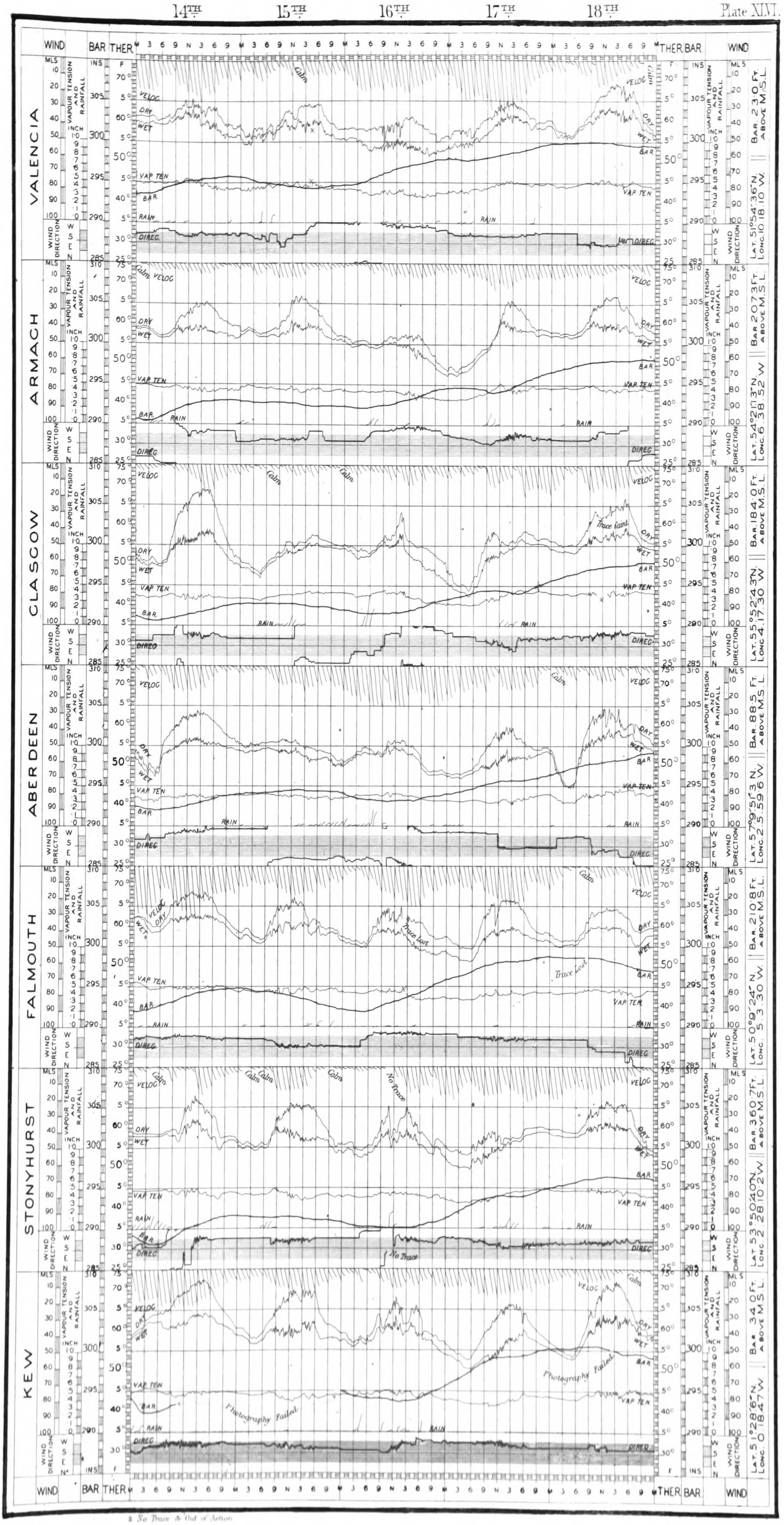
Plate XLV.



* No Trace or Out of Action.

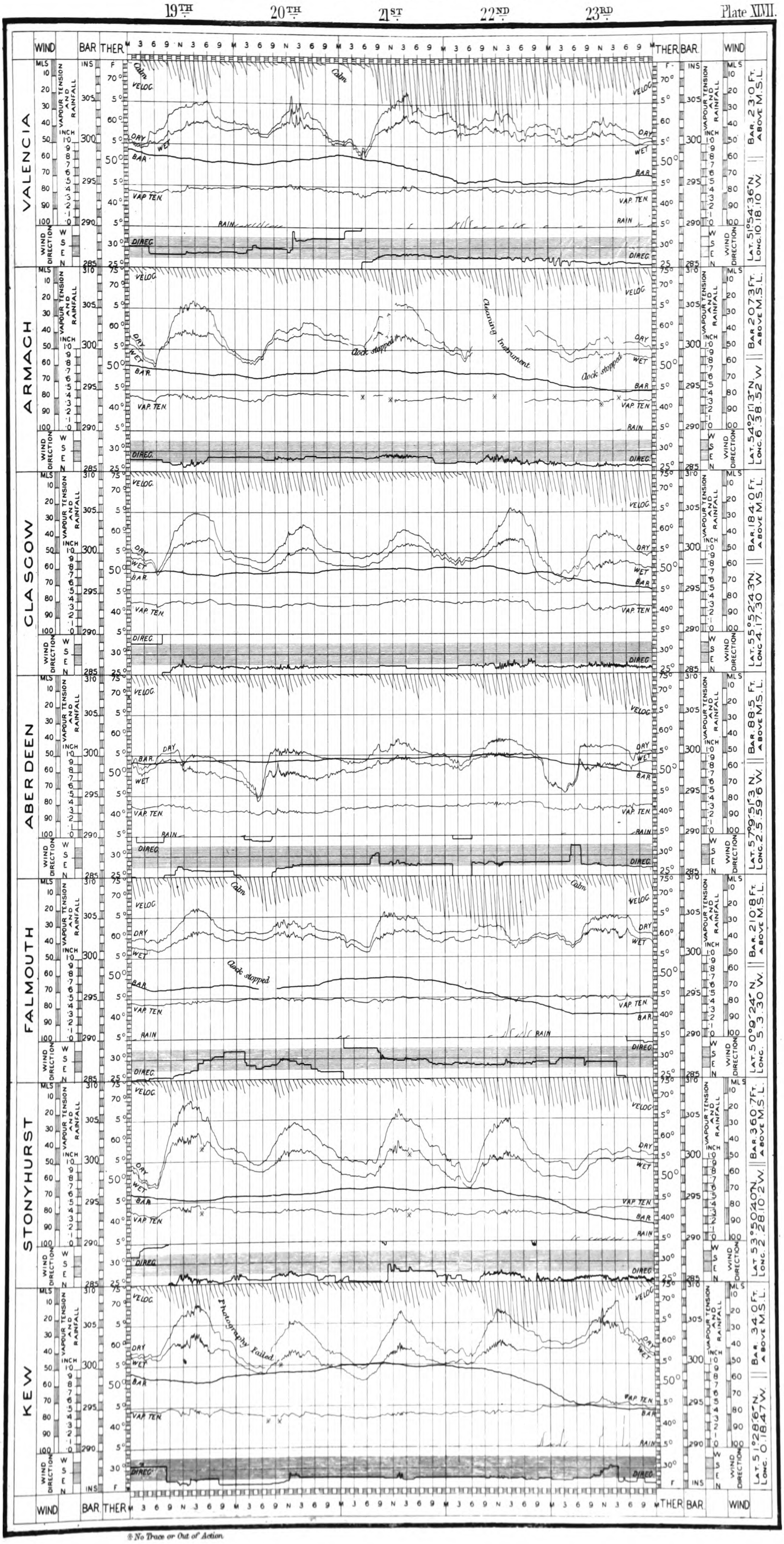
# AUGUST — 1878.

Plate XLVI.



* No Trace & Out of Action

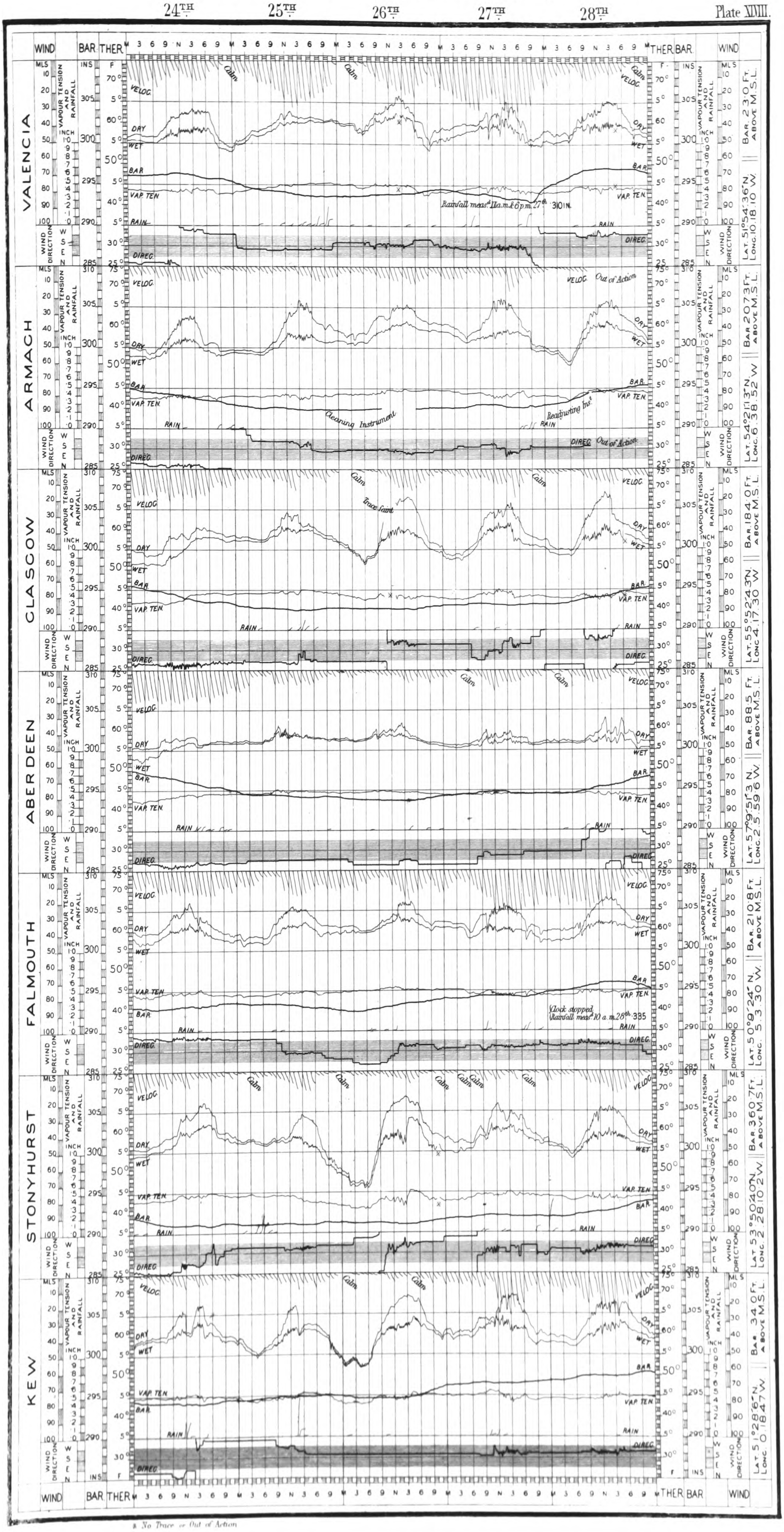
Plate XLVII.



⊗ No Trace or Out of Action.

AUGUST — 1878.

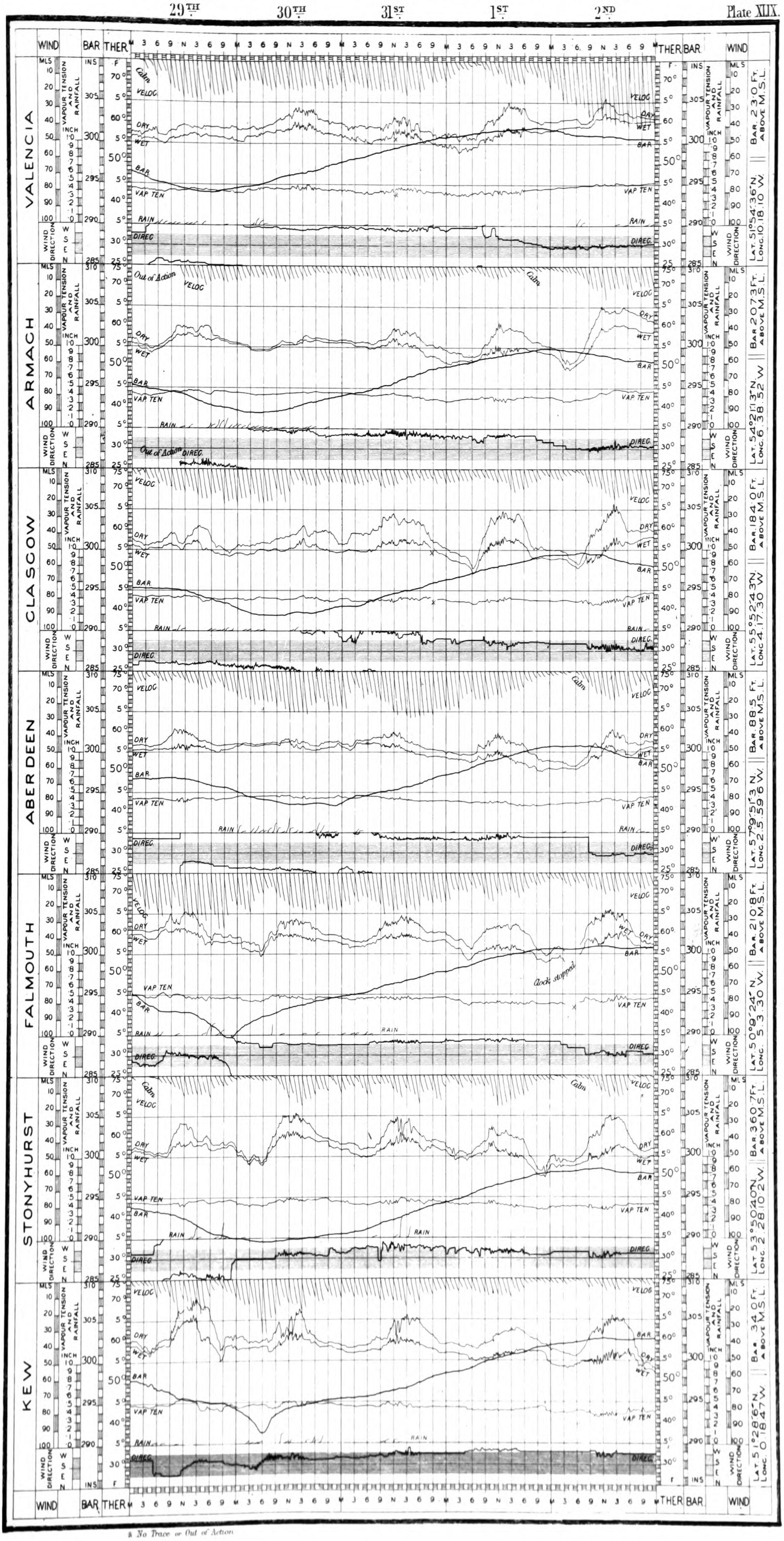
Plate XVIII.



x No Trace or Out of Action

# AUGUST & SEPTEMBER — 1878.

Plate XLIX.



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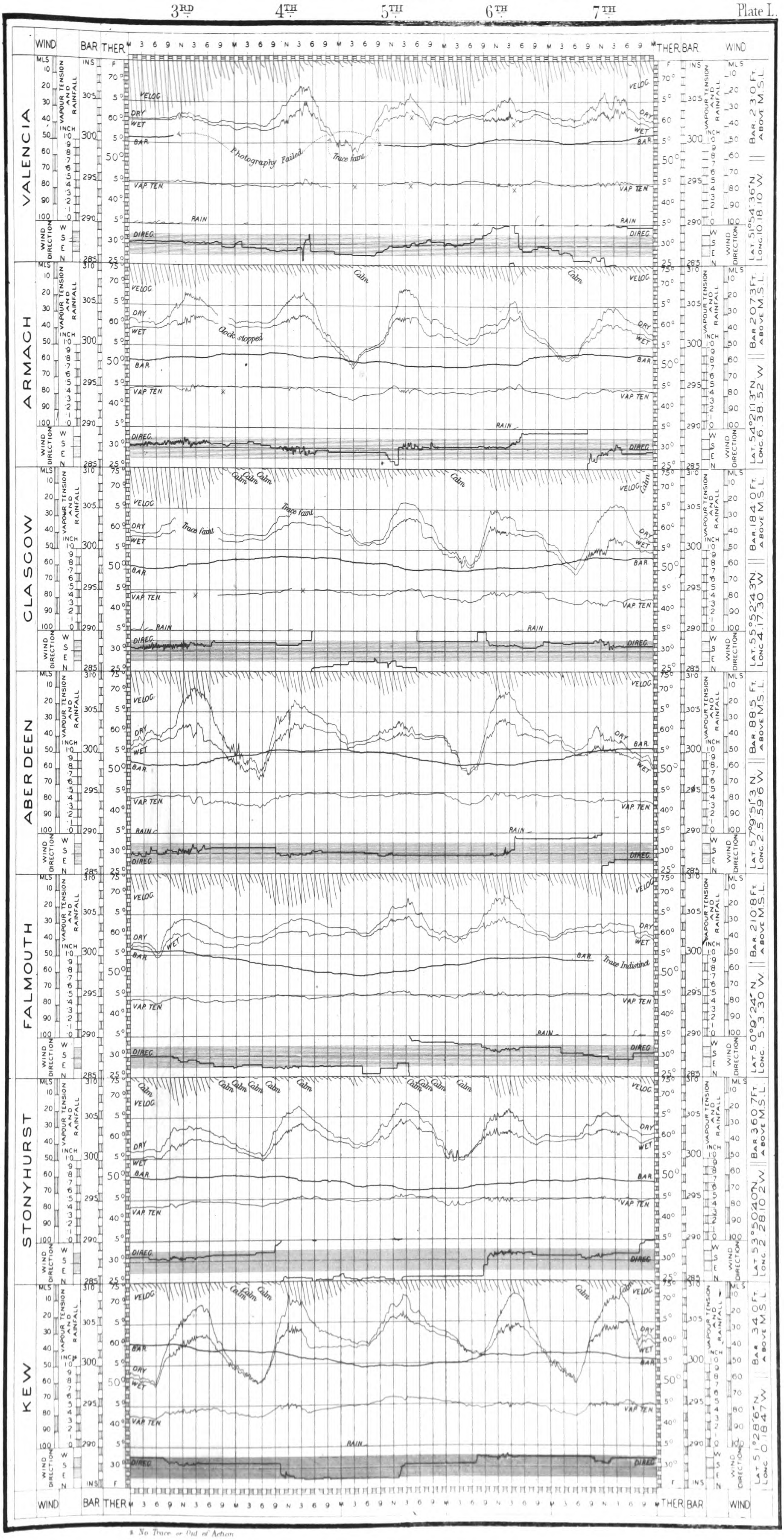
SEPTEMBER — 1878. Plate L.



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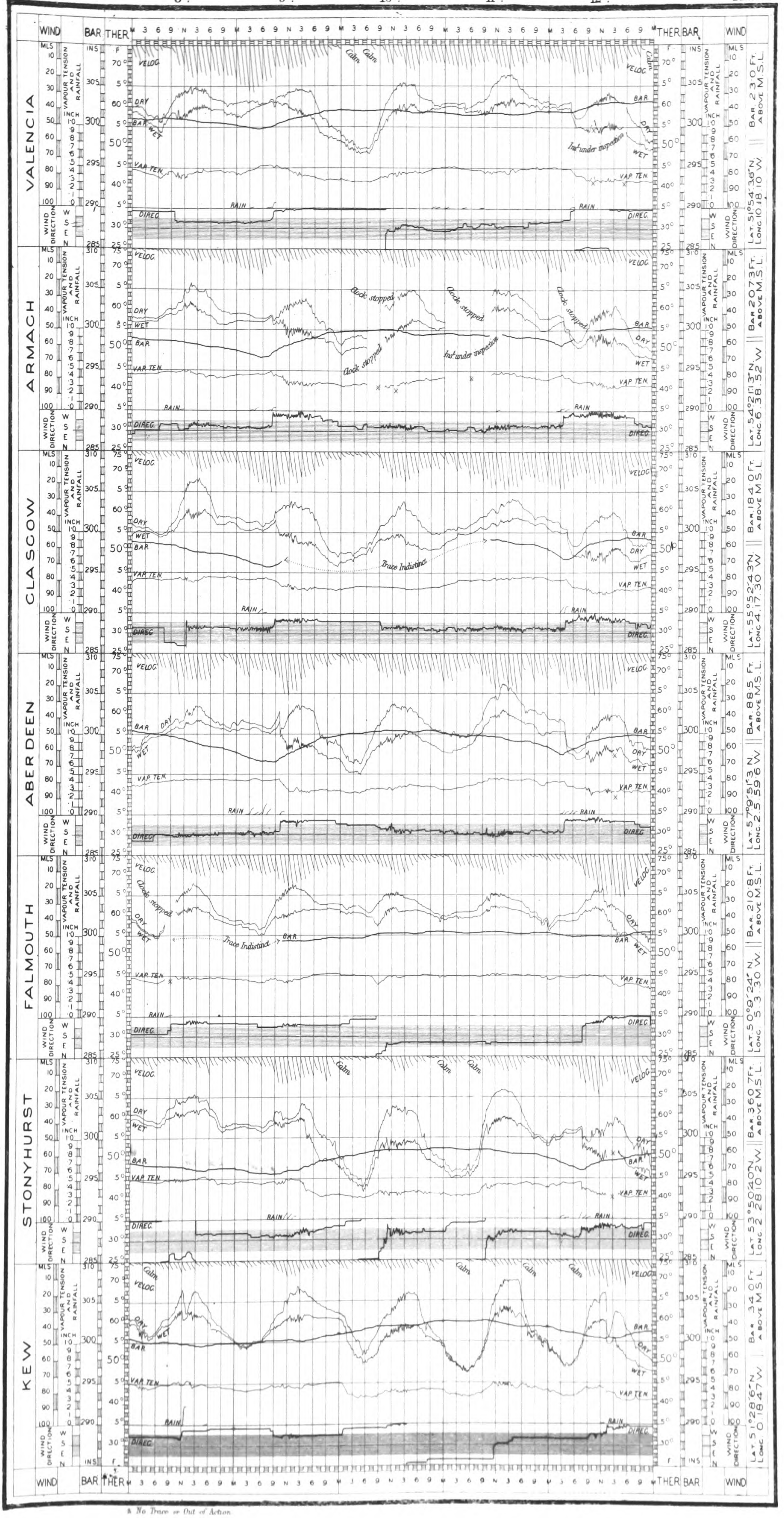
SEPTEMBER

Plate II.



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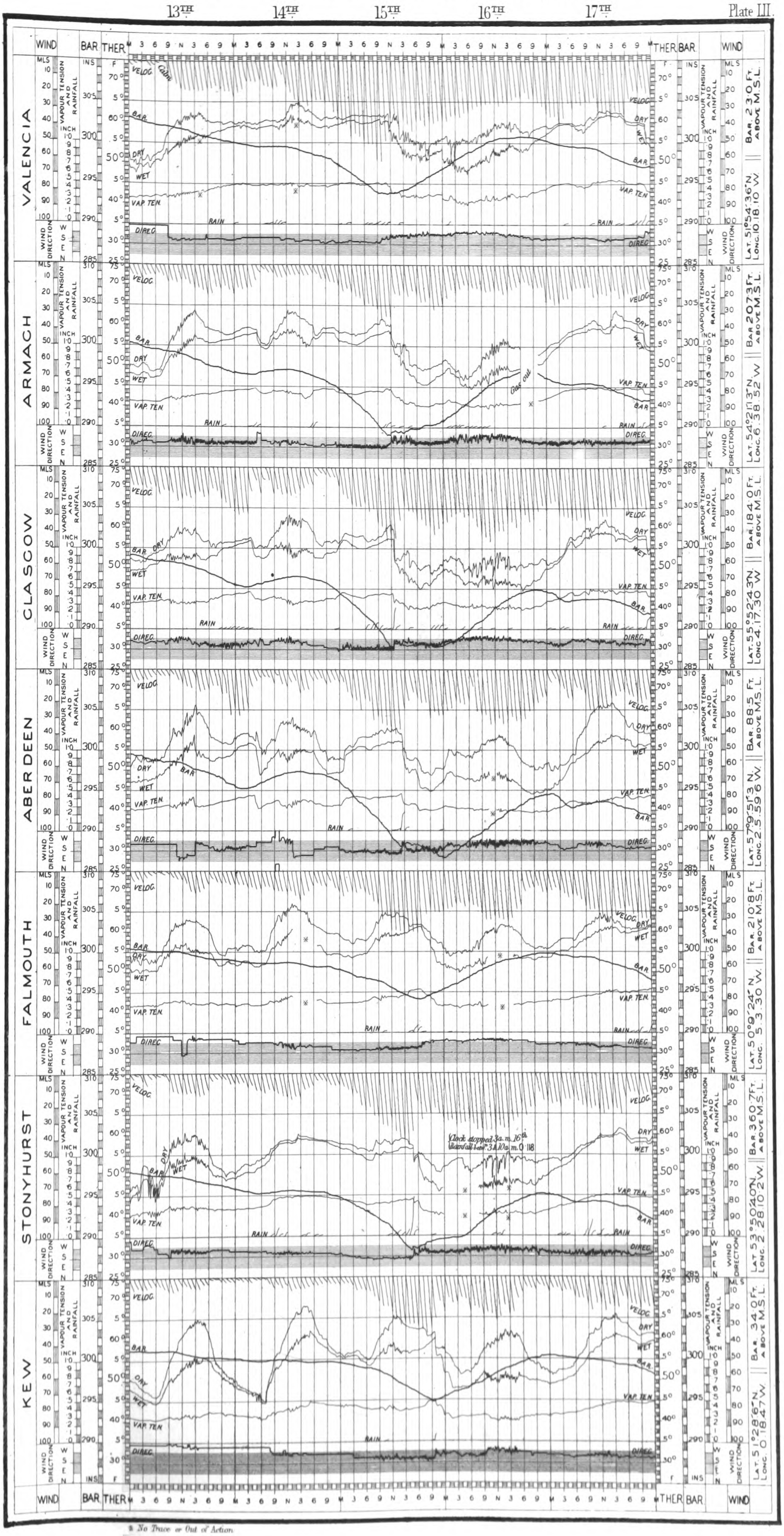
SEPTEMBER — 1878.

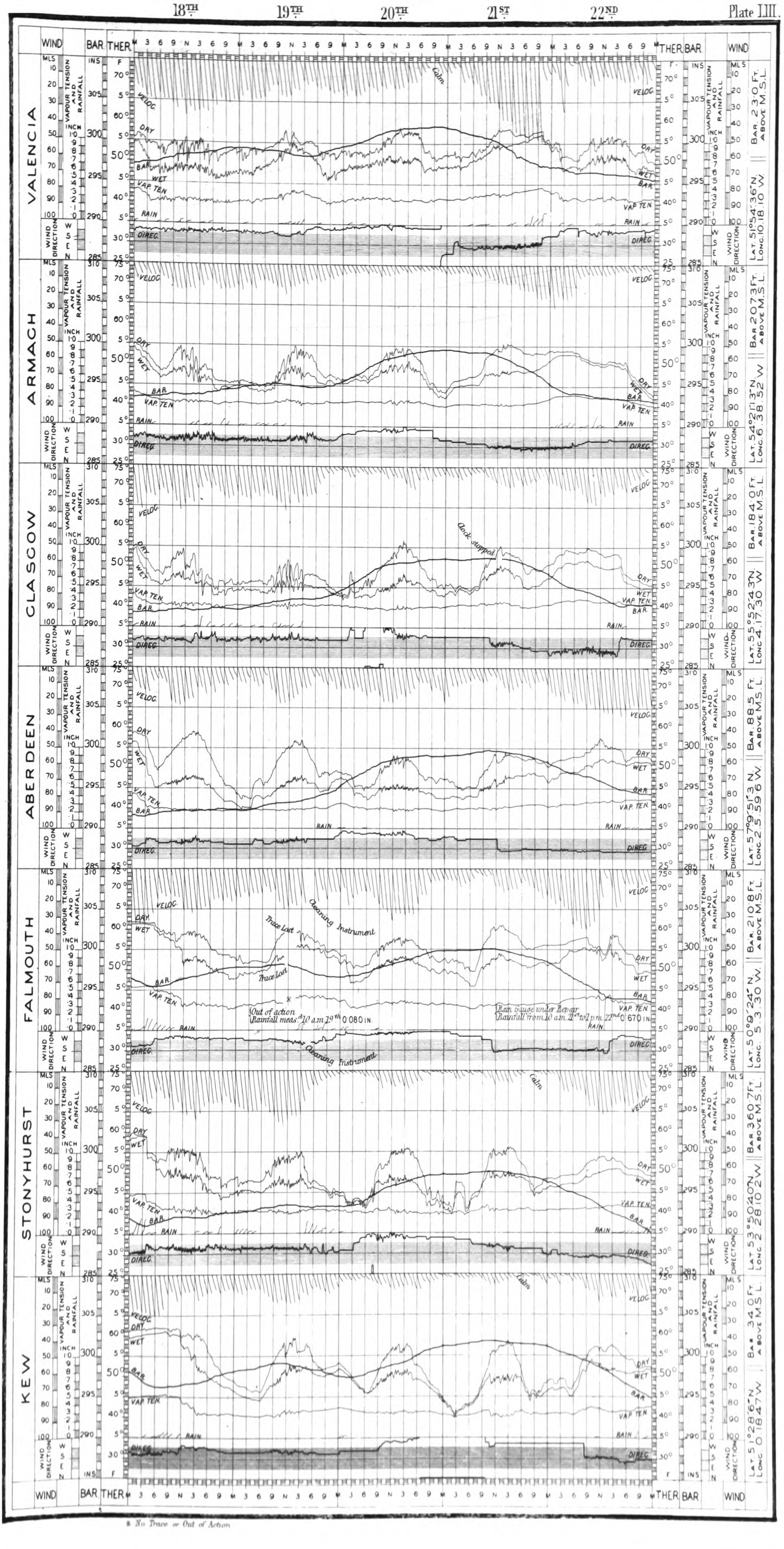
Plate III.



* No Trace or Out of Action

SEPTEMBER —

Plate LIII.



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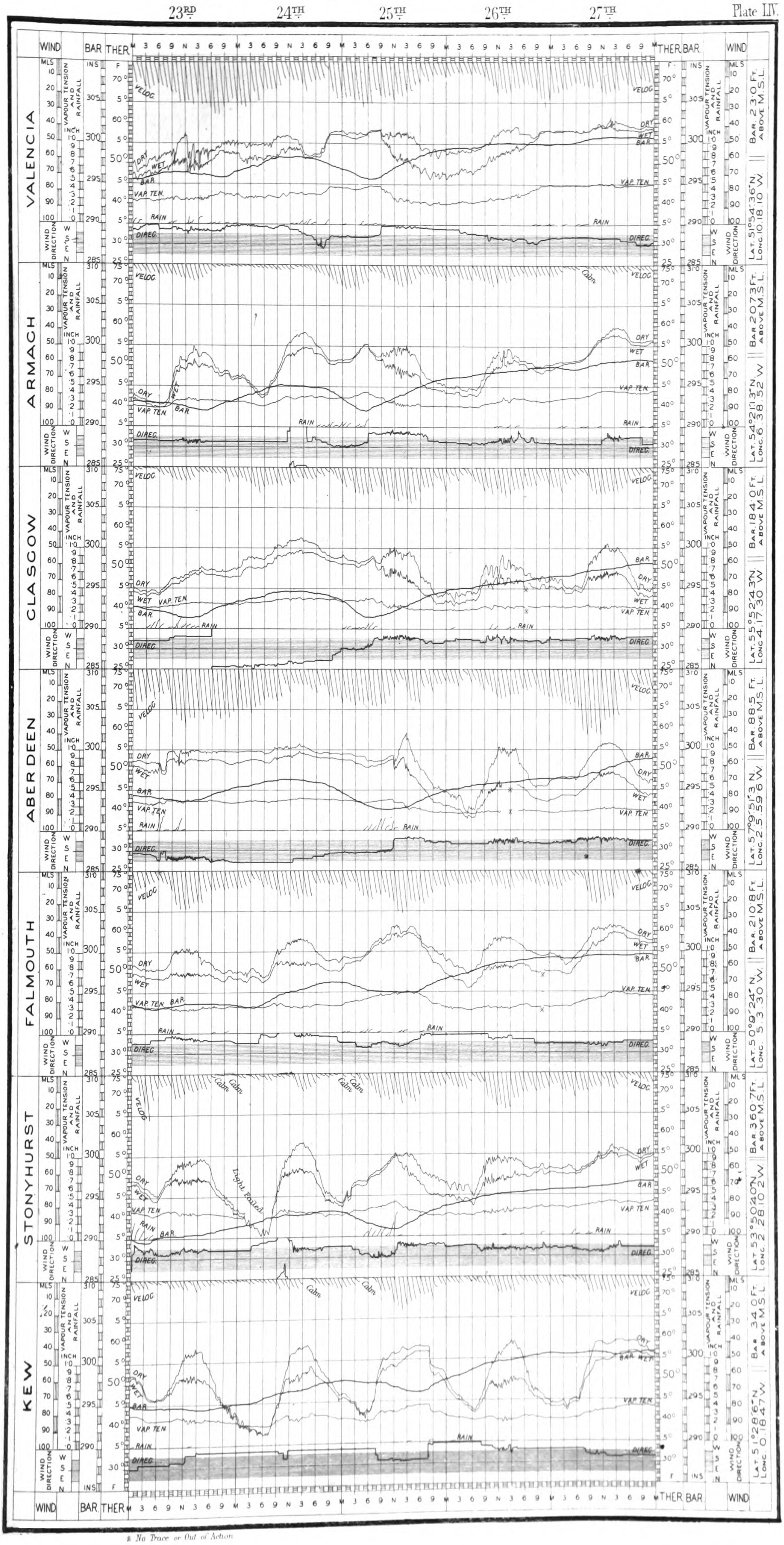
# SEPTEMBER 1878.

Plate LIV.



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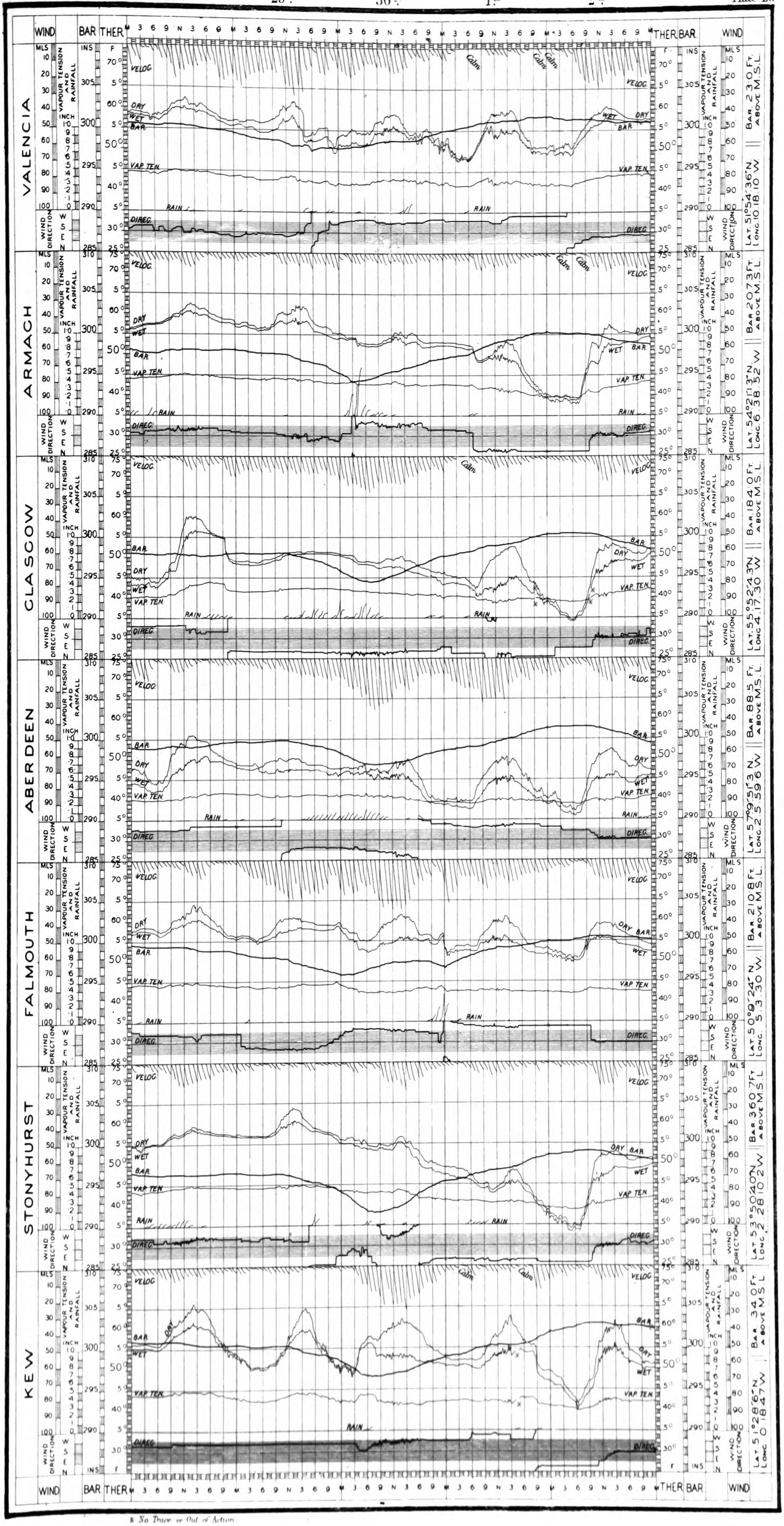
# SEPTEMBER & OCTOBER 1878.

Plate IV.

28th 29th 30th 1st 2nd



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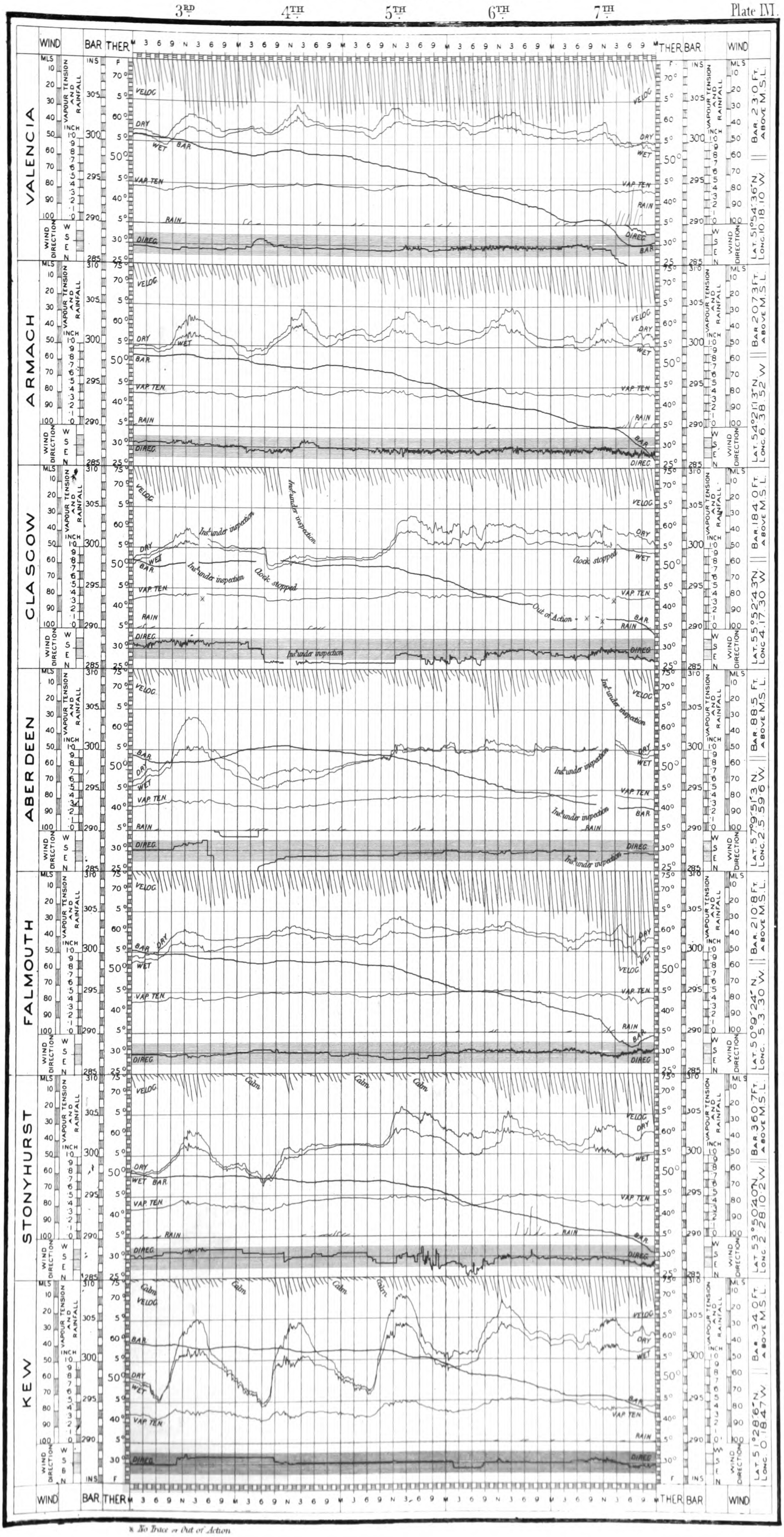
# OCTOBER — 1878.

Plate LVI.



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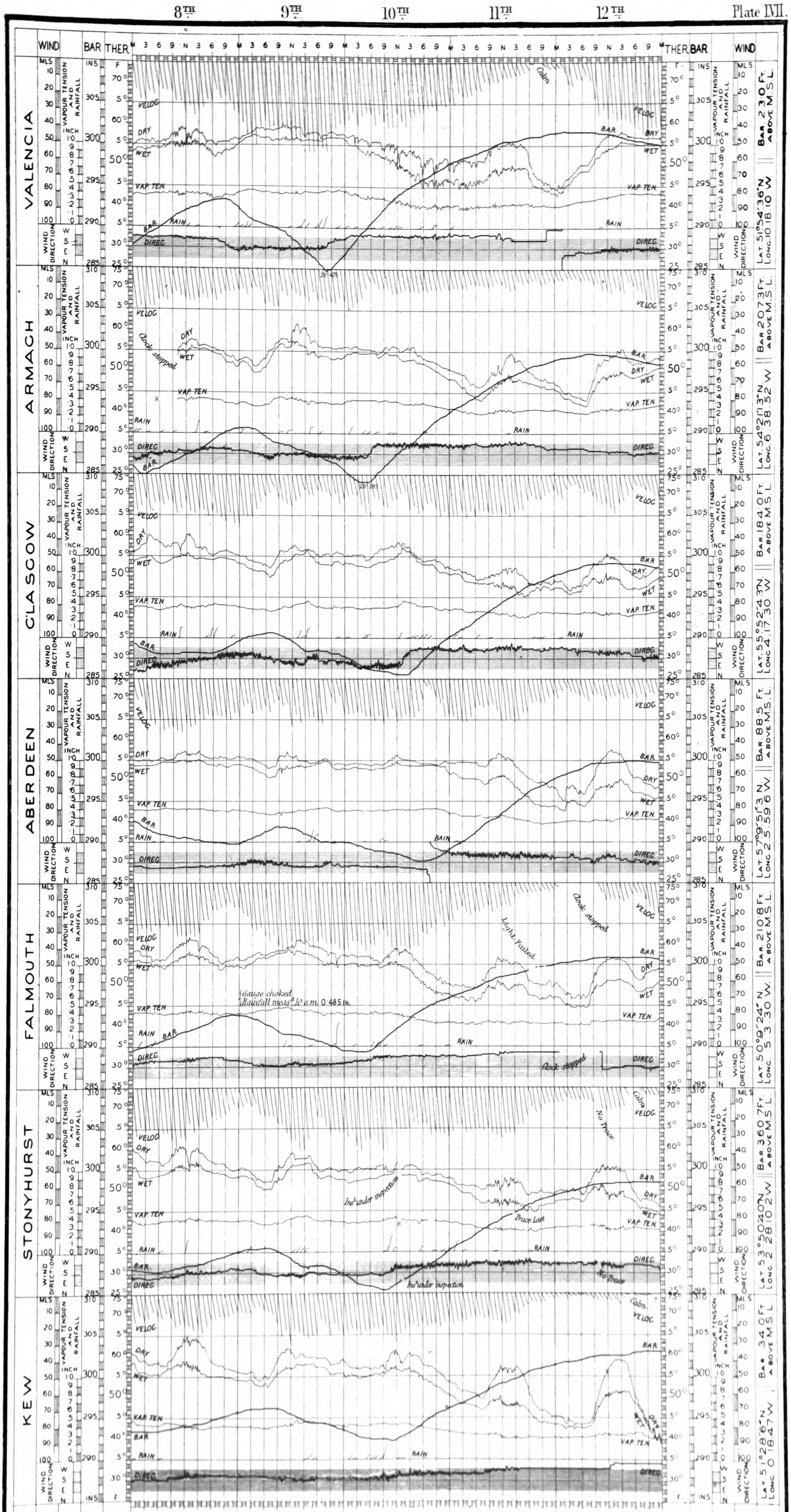

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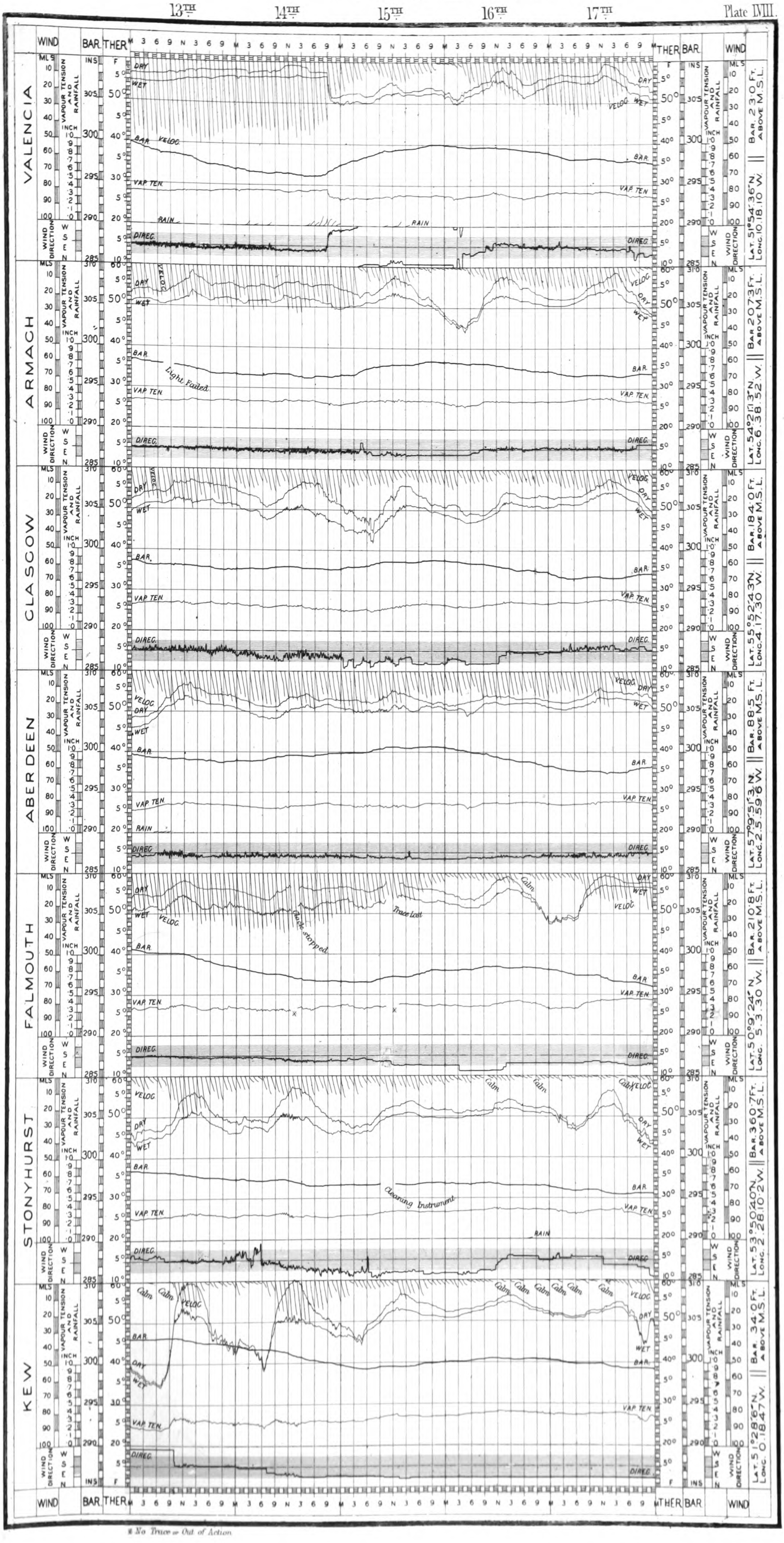
OCTOBER — 1878.

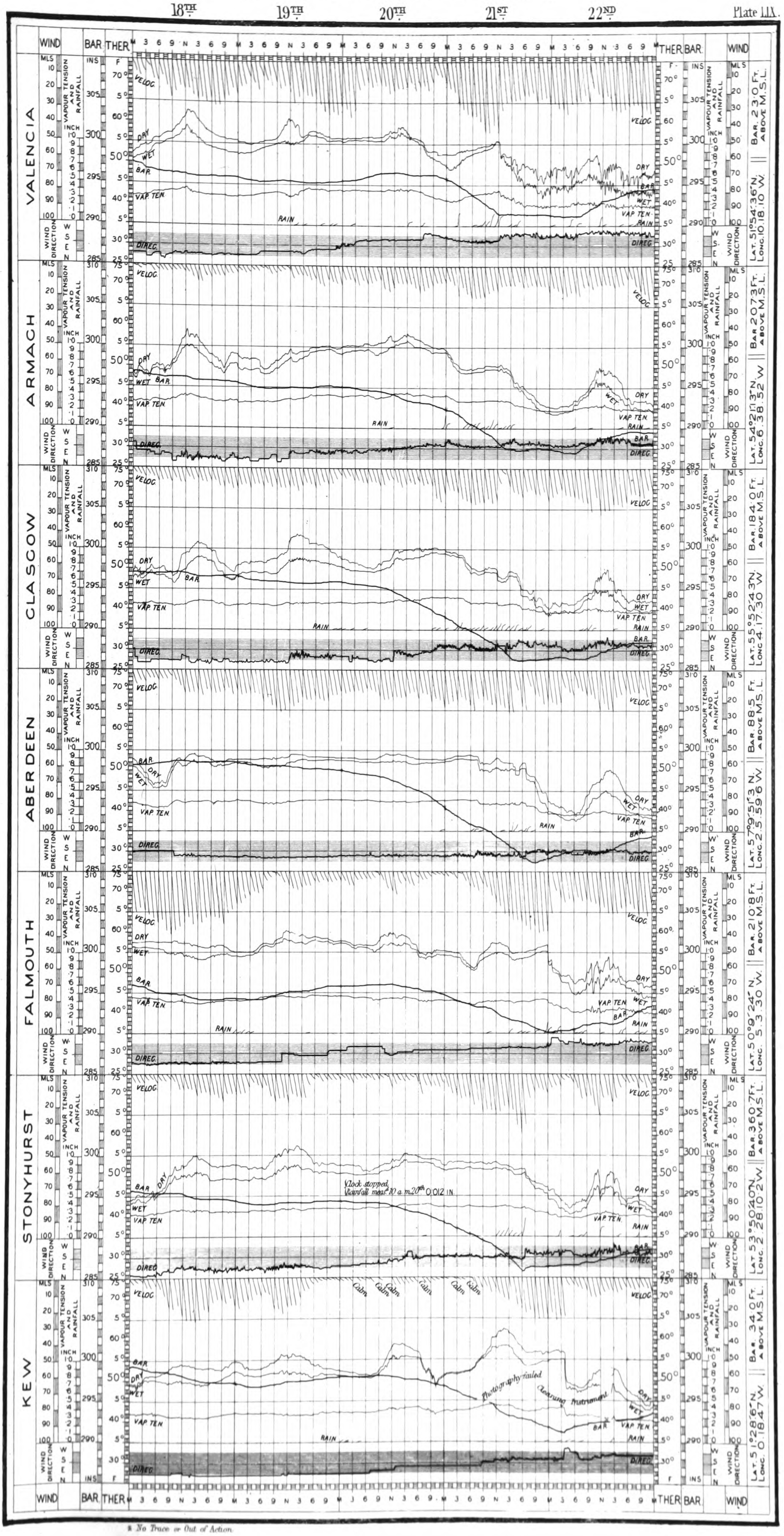
Plate LVIII.



* No Trace = Out of Action.

OCTOBER

Plate LIX.



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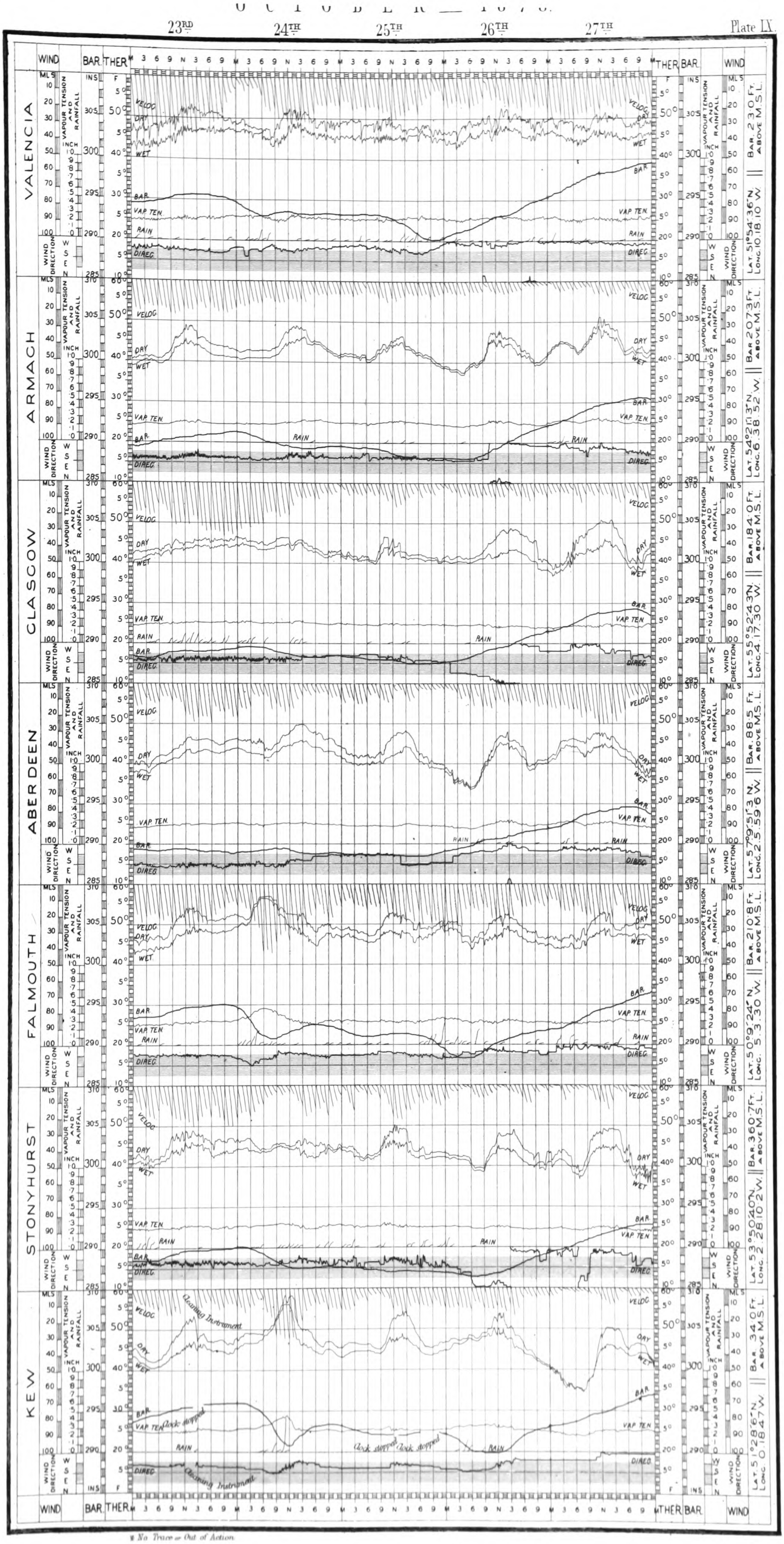

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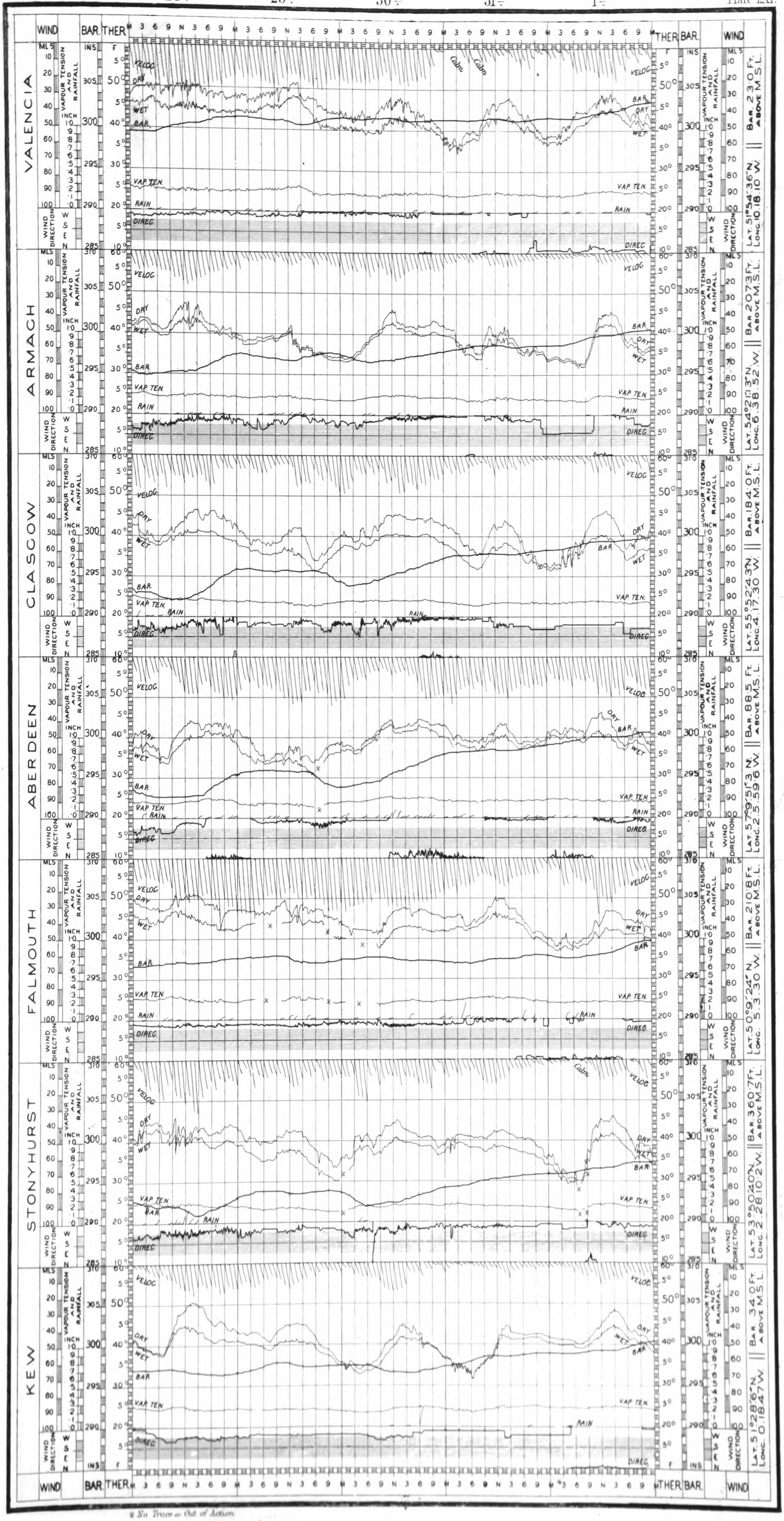
# OCTOBER & NOVEMBER _ 1878.

28TH 29TH 30TH 31ST 1ST

Plate LXI.



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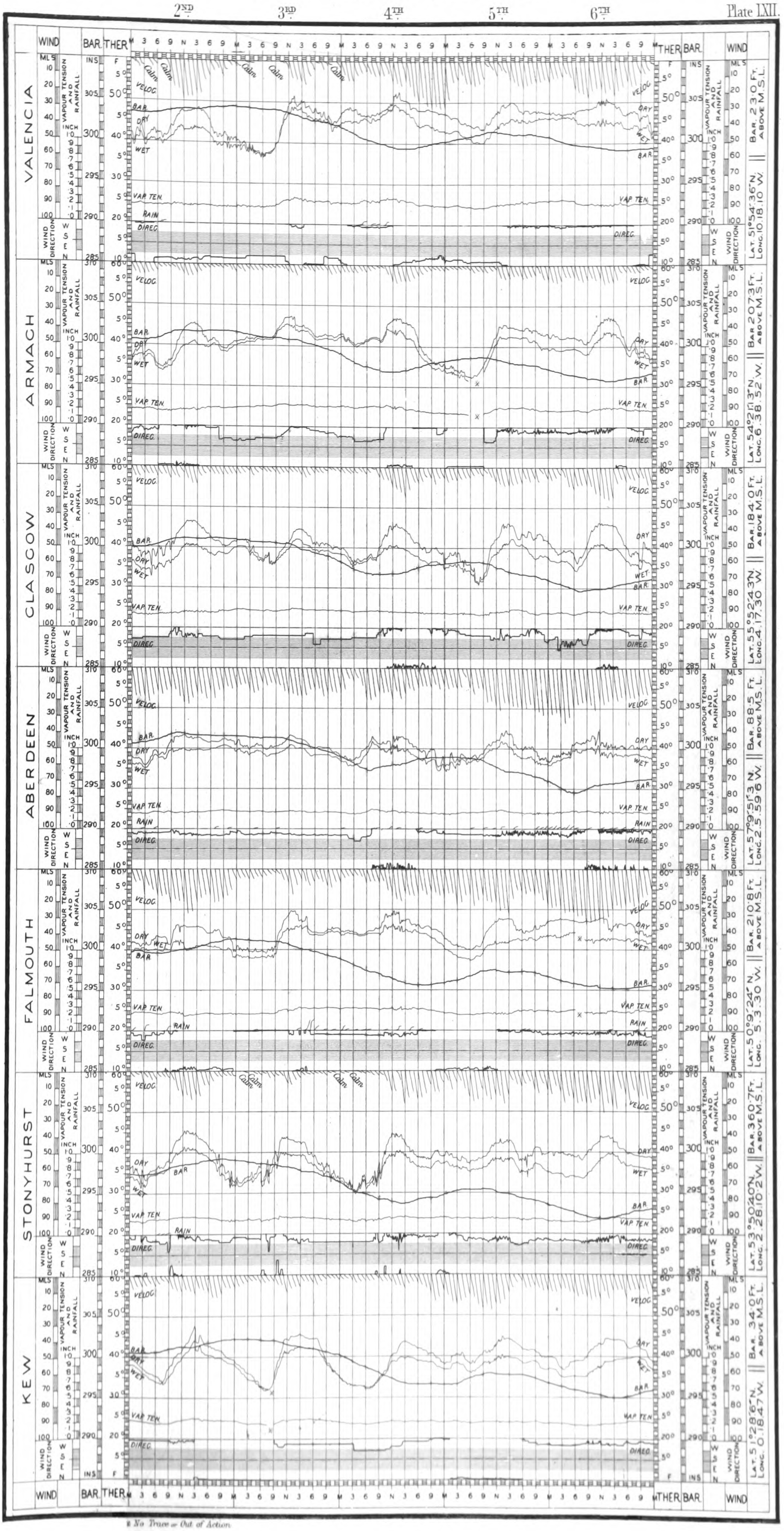
# NOVEMBER 1878.

Plate LXII.



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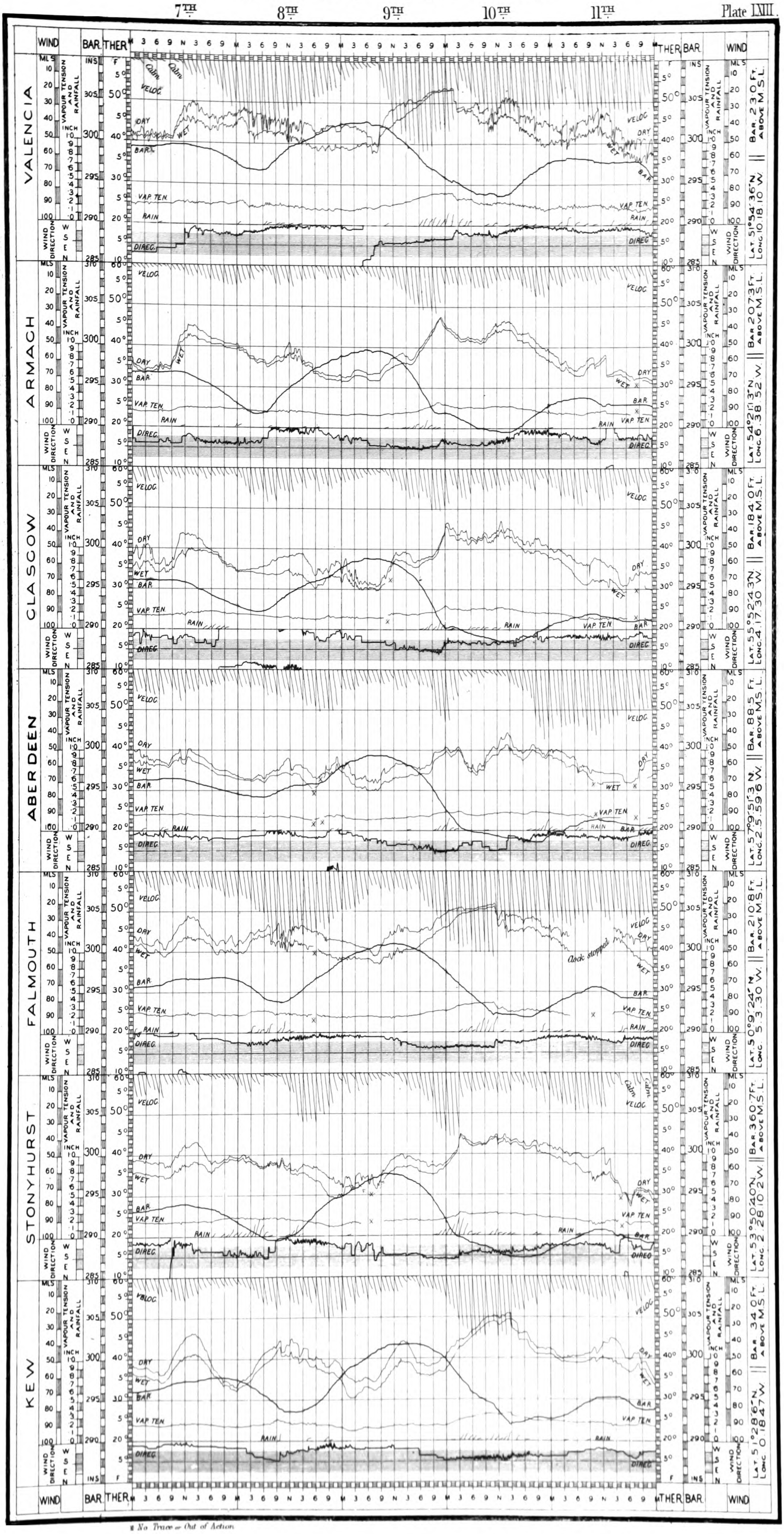

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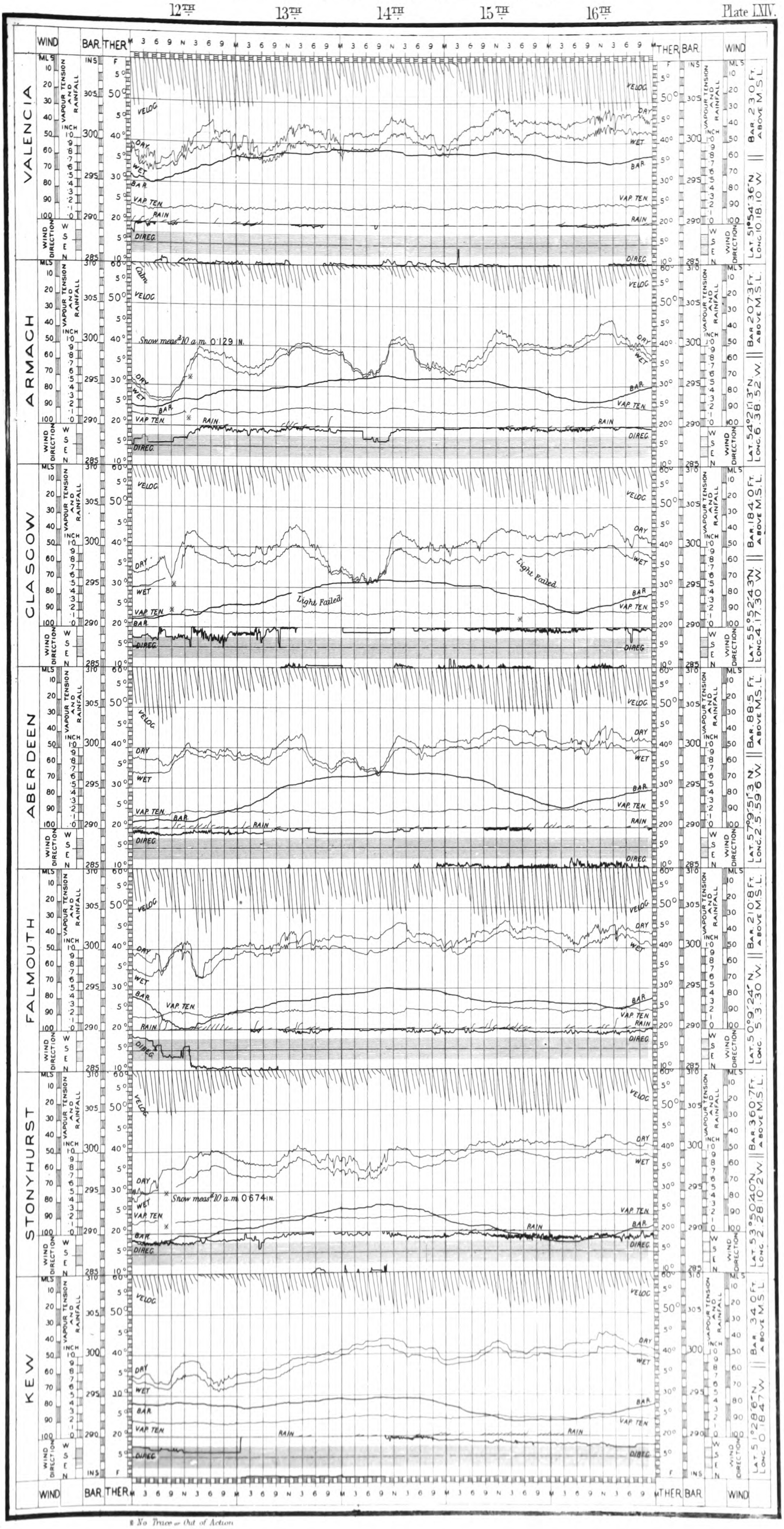
NOVEMBER — 1878.

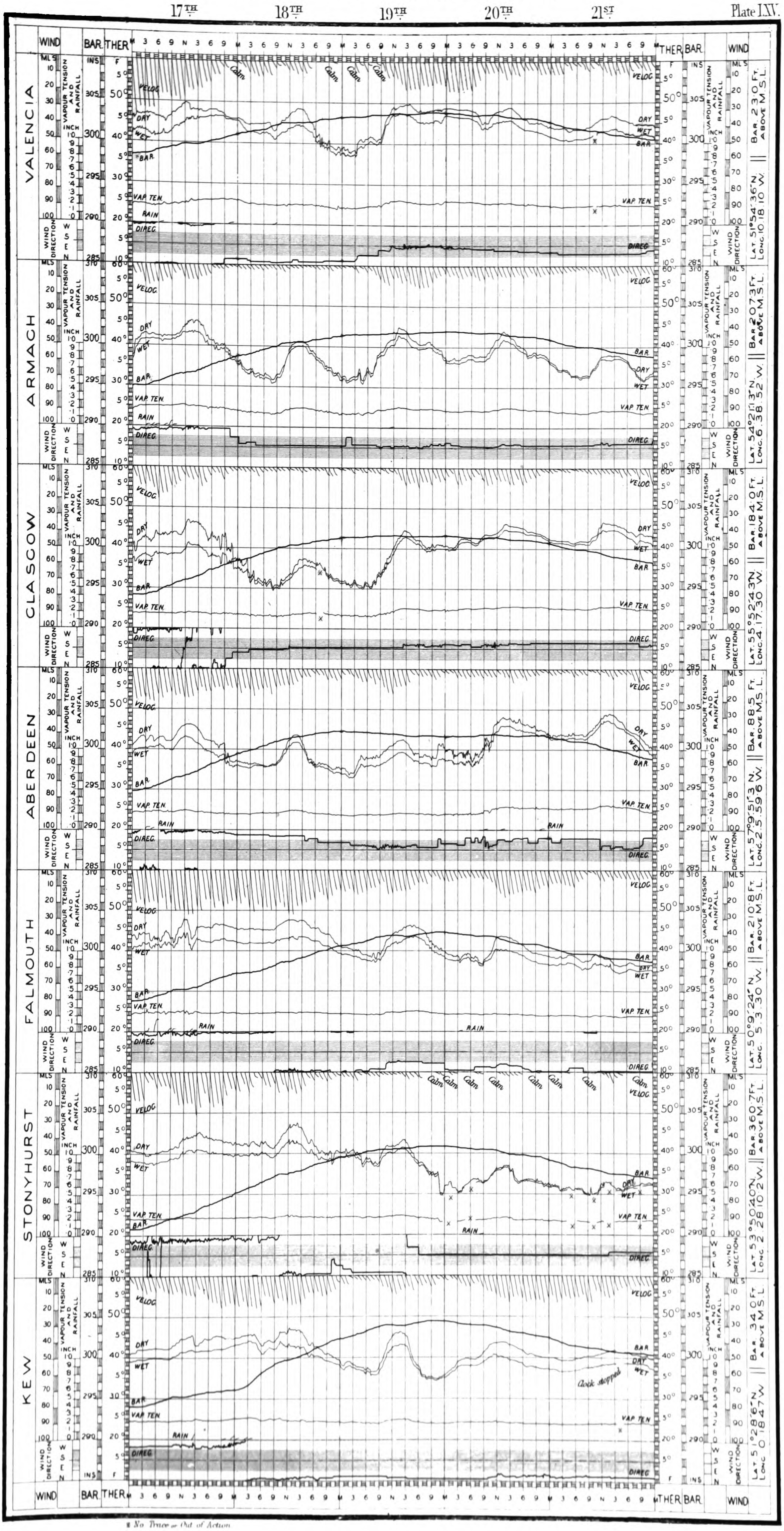


* No Trace = Out of Action

NOVEMBER—1878.

17TH 18TH 19TH 20TH 21ST

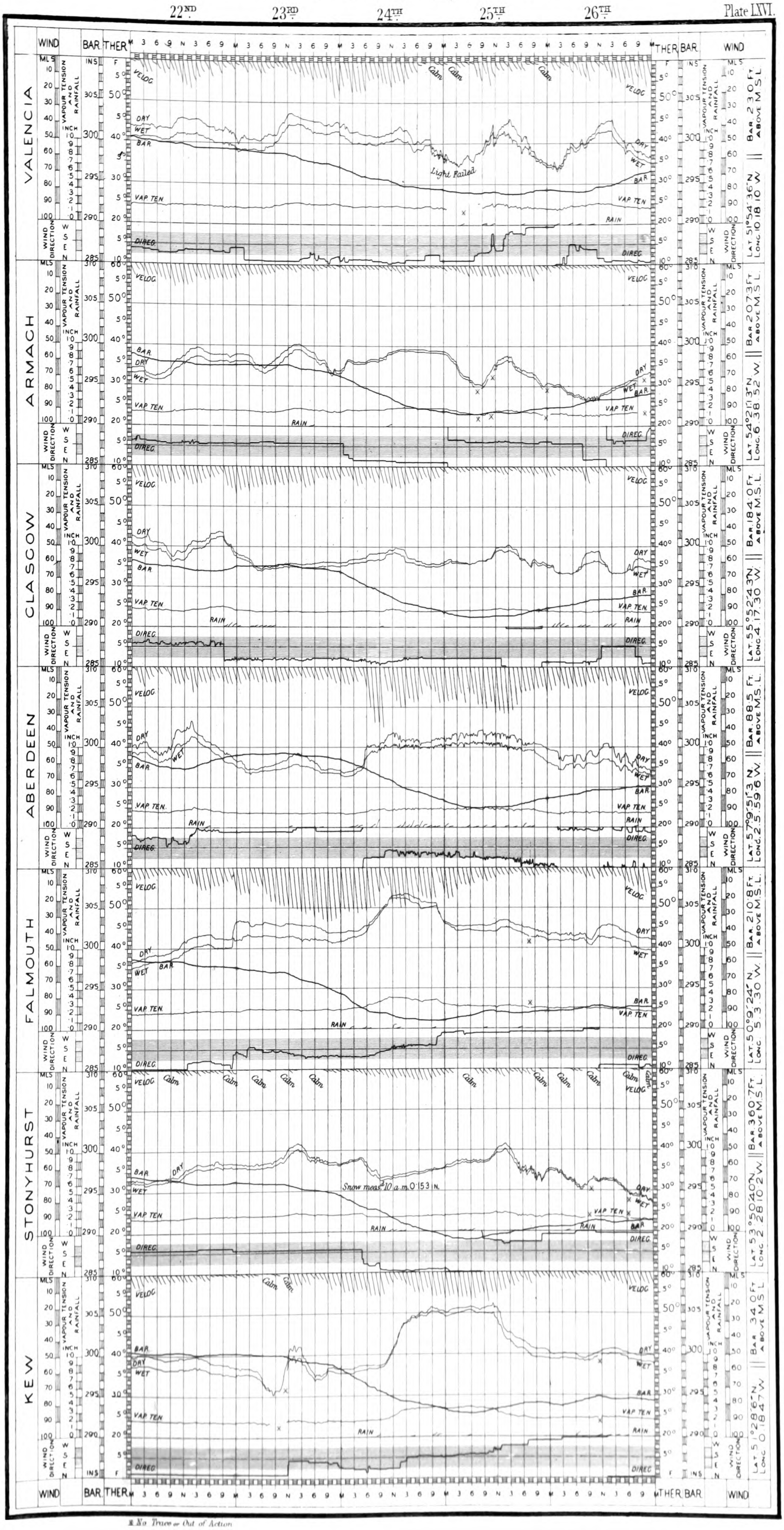
Plate LXV.



* No Trace or Out of Action

# NOVEMBER — 1878.

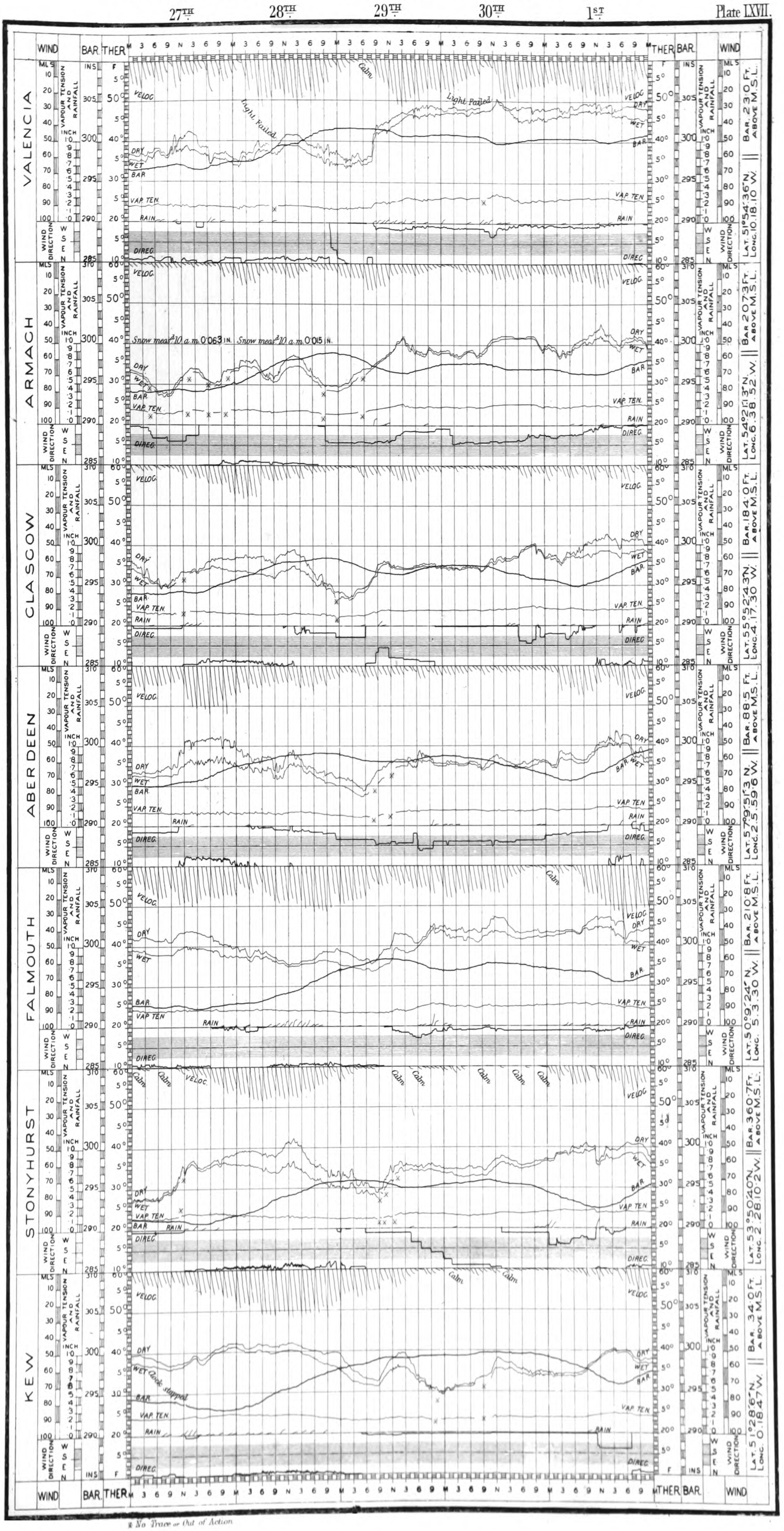
Plate LXVI.



✗ No Trace or Out of Action

# NOVEMBER & DECEMBER _ 1878.

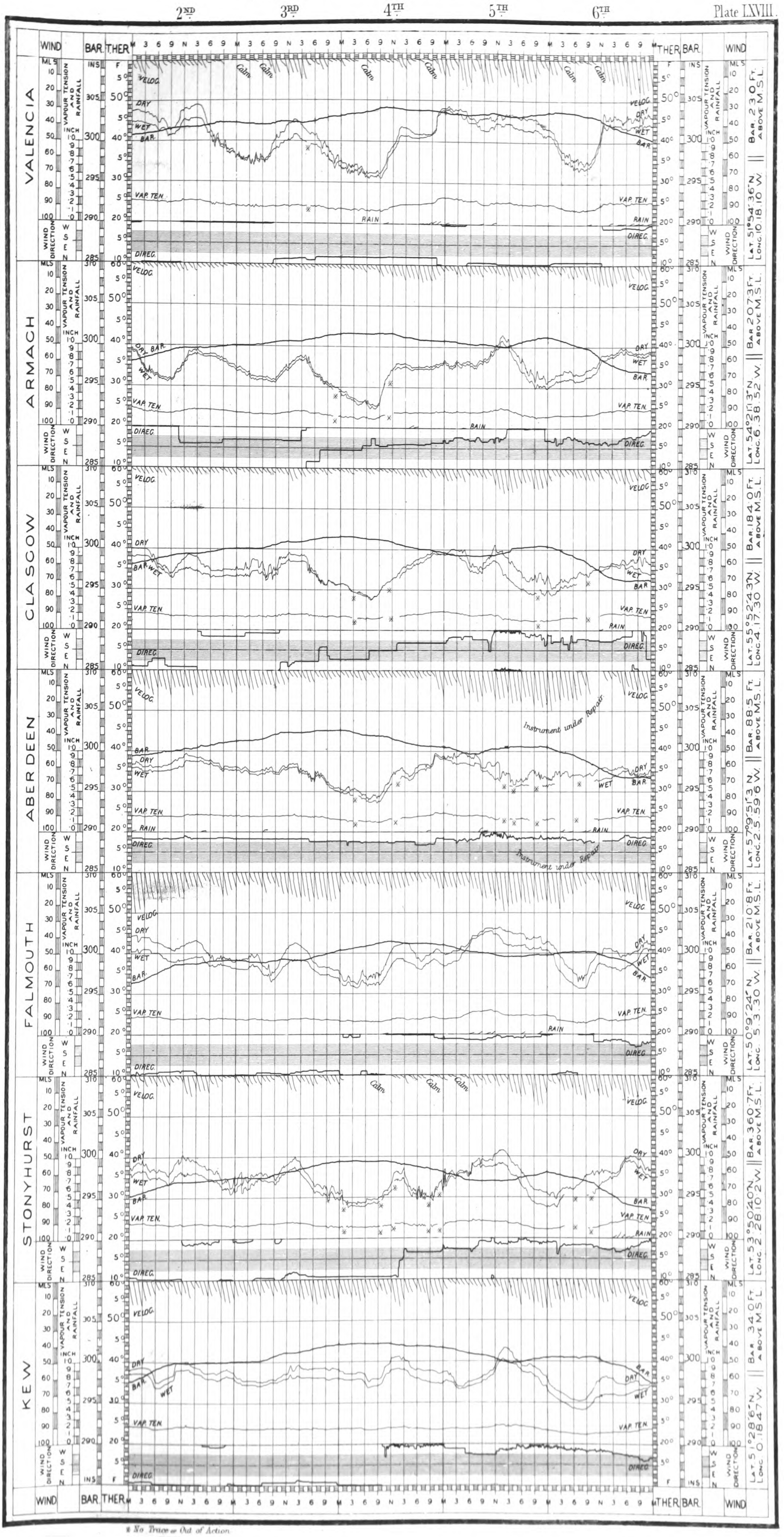
Plate LXVII.



× No Trace or Out of Action

DECEMBER 1878.

Plate LXVIII.



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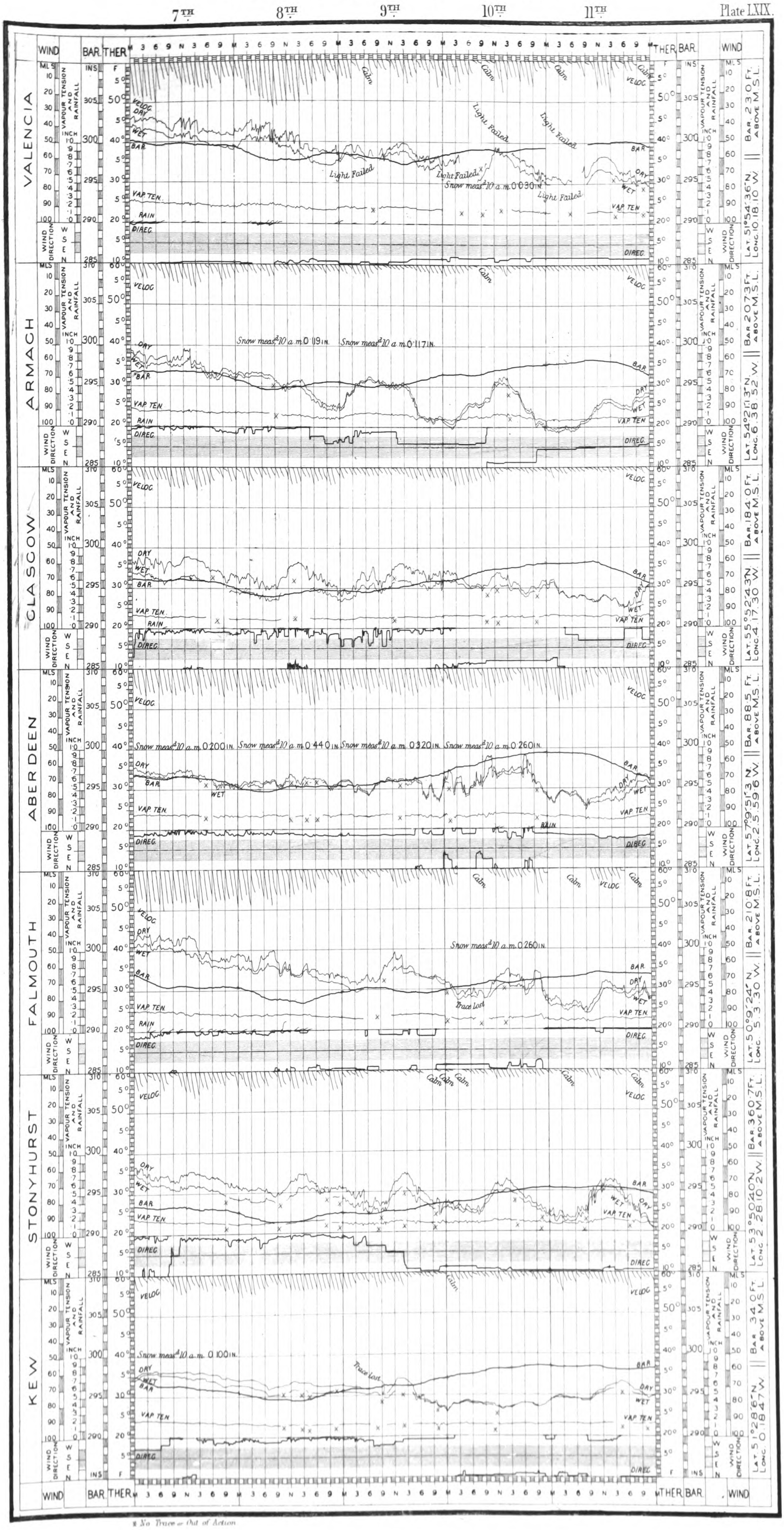
# DECEMBER — 1876.

Plate LXIX.



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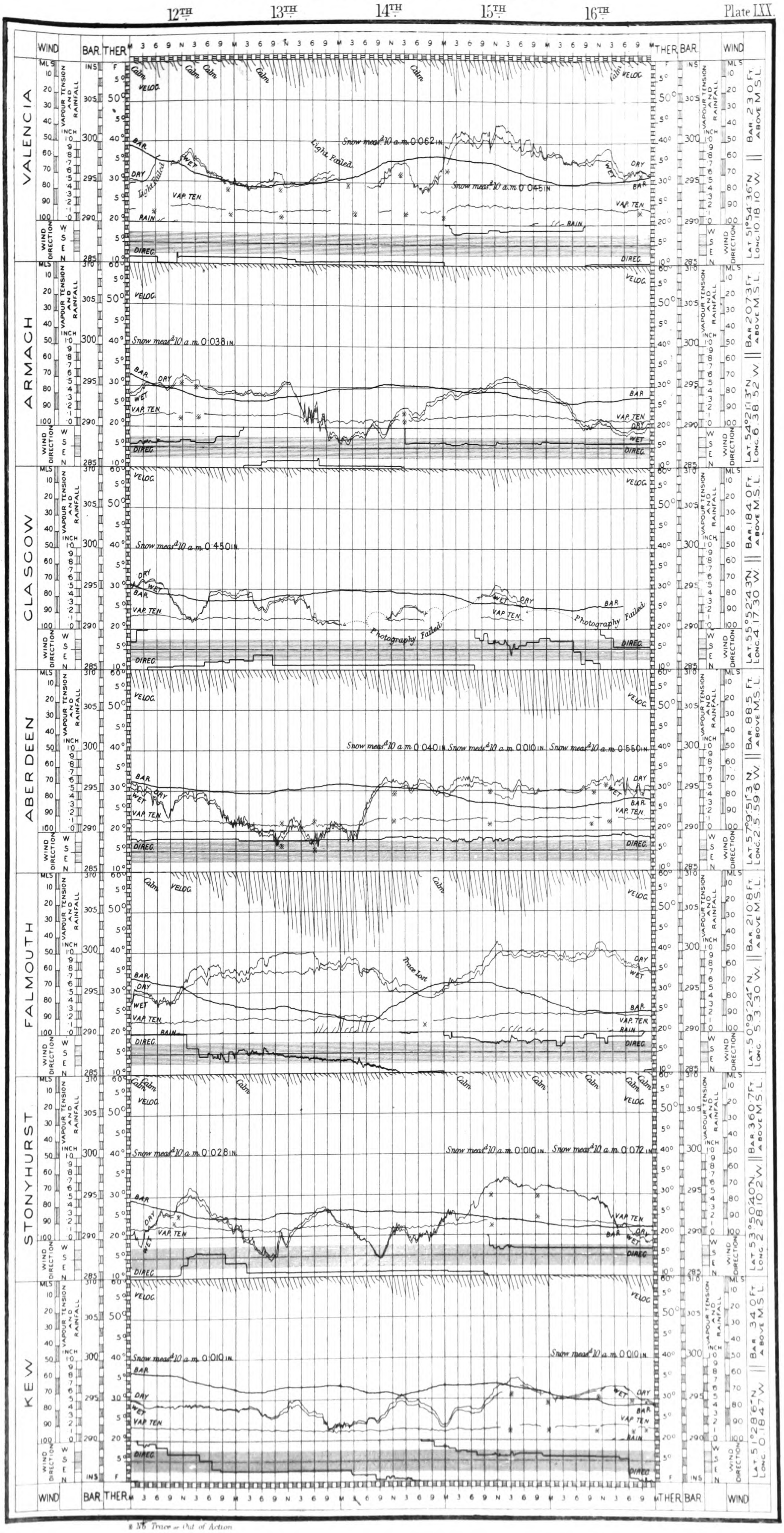
# DECEMBER —

Plate LXX.



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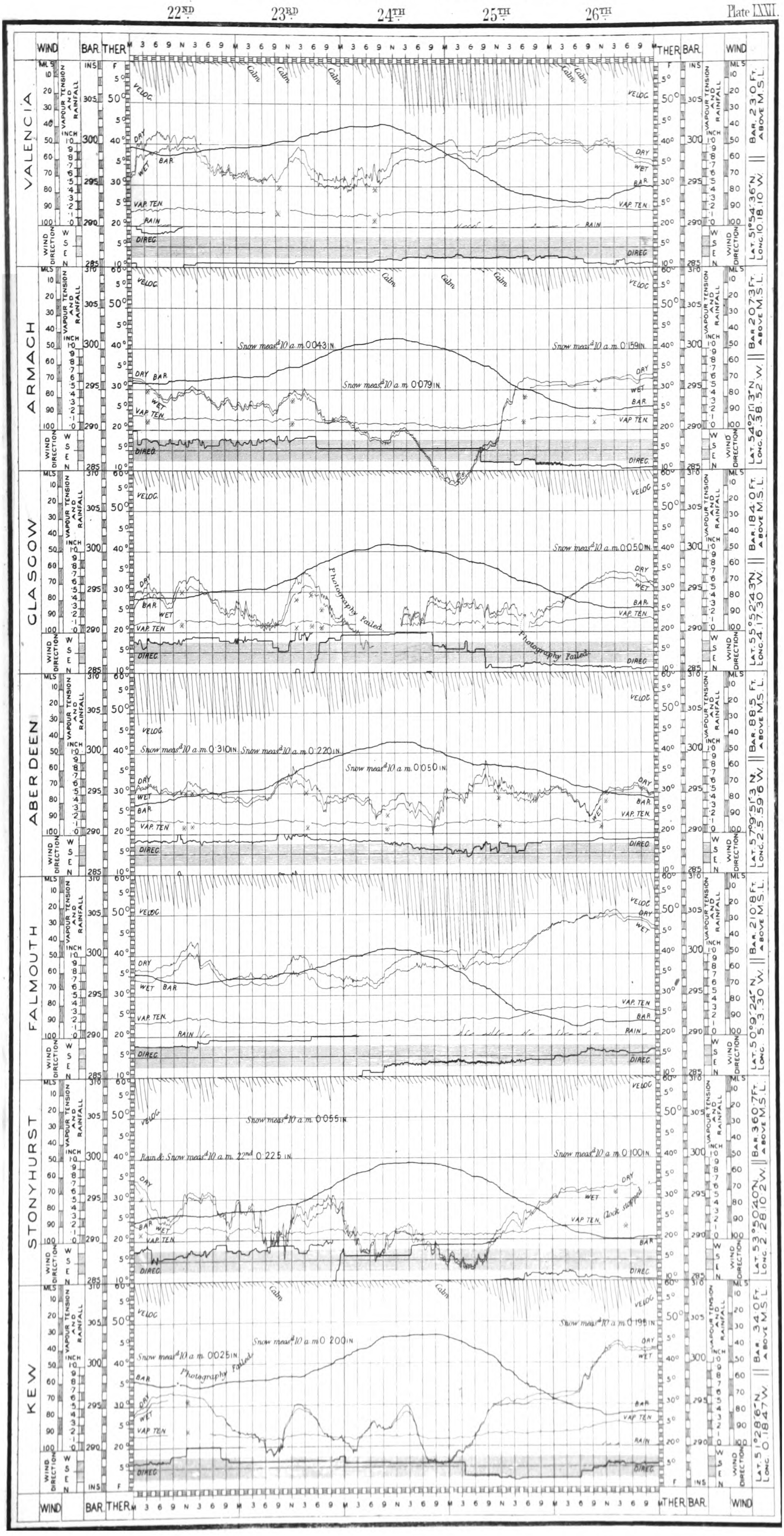
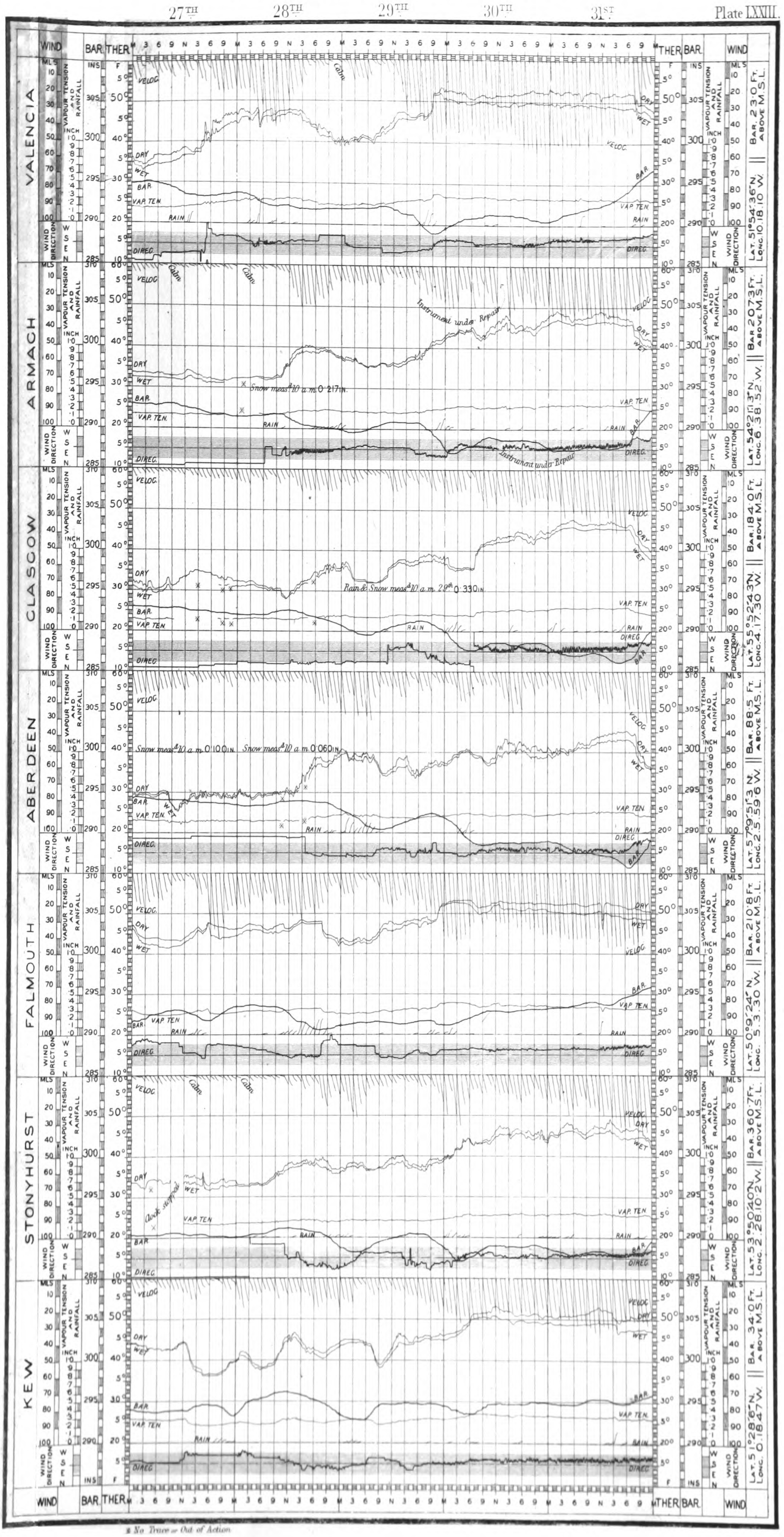
# DECEMBER 1878.

Plate LXXII.



# DECEMBER — 1878.

Plate LXXIII.



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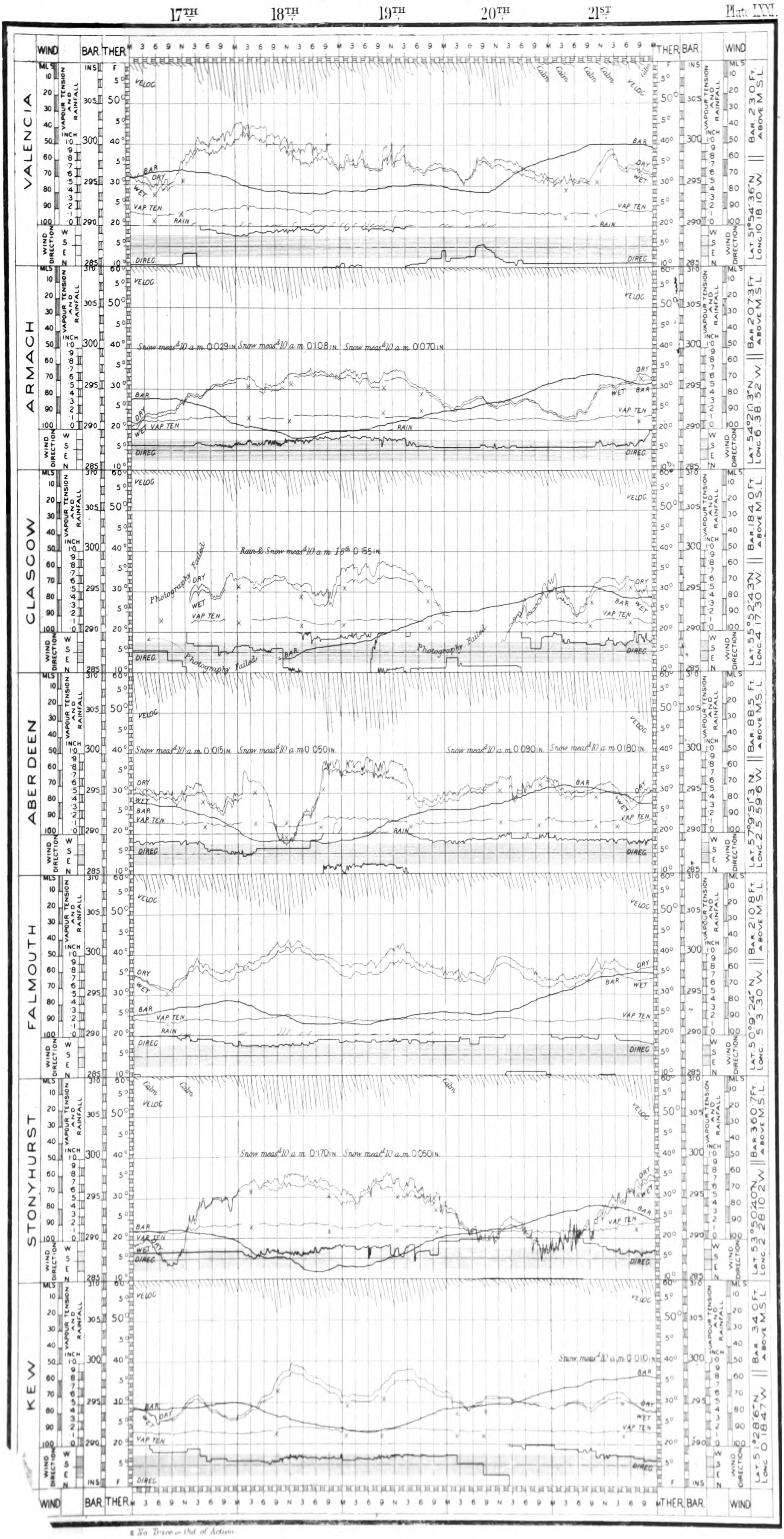
# DECEMBER 1878.

Plate LXXI.



× No Trace = Out of Action.